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MANAGEMENT ACCOUNTING

for FROZEN FOOD LOCKER and RELATED PLANTS

by Robert L. Dickens, C.P.A.
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Durham, North Carolina

FARMER COOPERATIVE SERVICE U.S. DEPARTMENT OF AGRICULTURE

FARMER COOPERATIVE SERVICE
U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.

Joseph G. Knapp, Administrator

The Farmer Cooperative Service conducts research studies and service activities of assistance to farmers in connection with cooperatives engaged in marketing farm products, purchasing farm supplies, and supplying business services. The work of the Service relates to problems of management, organization, policies, merchandising, product quality, costs, efficiency, financing, and membership.

The Service publishes the results of such studies, confers and advises with officials of farmer cooperatives; and works with educational agencies, cooperatives, and others in the dissemination of information relating to cooperative principles and practices.

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Preface

The nearly 10,000 frozen food locker and freezer provisioning firms in the United States represent an important segment of the frozen food industry. In recent years these firms have expanded and diversified their activities and functions to adjust to rapidly changing conditions in the industry. This has intensified the need for better information on which management can make intelligent decisions.

Farmer Cooperative Service has long worked with cooperatives and other firms in providing management with information needed in making their decisions.

In connection with its responsibility under authority of the Agricultural Marketing Act for research in this area, the Service contracted with the Department of Economics and Business Administration, Duke University, Durham, N. C., to make the study on which this report was based. This institution has had long experience in working with small and medium-size businesses and is interested in developing accounting methods that will increase the usefulness of accounting information as a management tool.

The objective of the study was to develop accounting procedures and techniques that would provide departmental cost information needed to properly manage many small and medium-size businesses.

Paul C. Wilkins, Chief, Frozen Food Locker Branch, Farmer Cooperative Service, assisted in planning the study and advised on various phases of industry operations as they related to it.

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Management Accounting for Frozen Food Locker and Related Plants

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Effective management of a business requires information that can be provided only by adequate accounting data. Many small businesses and some larger ones view accounting as a necessary evil imposed by requirements of the tax laws. Records maintained primarily for tax purposes do not provide adequate management data. However, a little additional effort can convert these data into useful management tools.

Profit[1] margins of all businesses - large and small - have been declining. The squeeze created by higher cost and changing markets makes survival dependent on effective management. In times past, the operator who had a group of lockers could produce a profit with no real management effort. These times are gone. The businesses that survive will be those whose management[2] is constantly seeking improvement through new income sources and through control of operating expenses.

It is obvious that a frozen food locker plant or freezer provisioner with one bookkeeper-accountant cannot afford an elaborate cost system like those used by large industrial plants. The operation is often as complex, but the cost of maintaining such records would be prohibitive. The small plant, however, can establish

[1] In business enterprises, other than cooperatives, total gross receipts, less all expenses, are termed net profit or net income and are a return on investment to the owner as stockholders. In a cooperative, these receipts, less expenses, are called net savings or margins since they are not profits to the association. After paying a limited dividend to any stockholder, the cooperative distributes these net savings or margins to its members in proportion to the volume of business each did during the particular period.

The terminology customarily used by business enterprises other than cooperatives has been used throughout this manual. Accountants for cooperatives will have little difficulty in determining the appropriate substitute terms to describe their accounting practices.

[2] The terms manager and management as used throughout this manual refer to those who have operating and decision-making control of the business. In some cases the owner-operator is the only person involved. In other cases the operating manager may be reporting to owners, a board of directors, or partners in a partnership.

records which will provide very valuable information. When this information is combined with the manager's intimate knowledge of the business, it becomes an effective management tool.

This manual has been prepared to emphasize the need for adequate accounting information, to show how such information can be obtained, and to indicate how it can be used in making management decisions. All the procedures and forms in this manual will not be used by any one plant. Alternatives are offered so that each business can select those methods most suitable to its situation. This provides the opportunity for the business to proceed only as far as it considers necessary in analyzing its operations. At the same time, a complete setup is presented which can be tailored to the needs of the business and then used.

Unfortunately, the manager of a small business is often not in a position to know what accounting procedures and analytical techniques are required. He must turn to trained employees or to outsiders, usually local public accountants, for assistance in determining what methods to use and in tailoring the methods to the business. Once this is done, the complete setup described in this manual can be maintained by anyone trained to keep books. Procedures are described whereby this person can prepare the necessary monthly statements with or without the use of monthly adjusting entries.

The analytical techniques and accounting procedures described in this manual were developed through the cooperation of six plants in North Carolina. The basic system was installed in each of the plants and operated under the supervision of the author for a period of 1 year. Managers of these plants attested the relative ease of maintaining the records and the value of the information provided. The six plants were:

1. A division of a farmer cooperative. A trained accountant who supervised the records for the entire cooperative maintained the records.

2. A manager-operated plant in which a major source of income was retail sales of plant-cured hams. The manager, who had no formal training in bookkeeping, kept the records and prepared the statements.

3. An owner-operated plant which operated an abattoir and received a major portion of its income from wholesale distribution of plant-processed meats. A secretary-bookkeeper maintained the records and prepared the statements.

4. An owner-operated plant which received almost all of its income from processing, curing and smoking, and storage. A secretary-bookkeeper maintained the records and prepared the statements.

5. A manager-owned plant with substantial sales of meats and plant-cured hams. The manager, who was trained in accounting, supervised the records and prepared the statements.

6. An owner-operated plant with most of its income from customer services. The owner, who had limited training in accounting, kept the records and prepared the statements.

Descriptions of the persons responsible for the records and statements are included to indicate that the basic methods described in this manual can be used by anyone trained to keep books. The type of plant and sources of income indicate that the methods can be tailored to the needs of a wide variety of operating situations.

Chapter I

Better Management Through Accounting

Two basic elements distinguish the procedures recommended here from those usually found in small businesses. First, income, cost, and expenses are broken down on a department or function basis. Second, statements are prepared monthly and set up on spread forms so that month-to-month comparisons can be easily made. Each of these elements is needed to provide adequate management information.

Breaking down the data on operating activities into departments or functions is essential to effective management. Without knowledge of the income and expenses of the various income-producing activities, how can an intelligent decision be made concerning an activity? Overall financial statements do not provide data needed for decisions as to individual products or services.

Without knowledge of the contribution each activity is making towards profit, it is impossible to decide whether to eliminate, keep, or put more emphasis on a particular activity.

Some will say that all the functions are necessary to hold the business together. This may be true but, without the knowledge that there is an unproductive function, there is no opportunity to decide whether it is essential or whether action is needed to make it produce more profit. Some businesses have been bled dry by one activity operating at a loss sufficient to wipe out the profits from other activities.

Some will say that they already know which functions are producing the most profit, but the records of most small businesses provide only vague and sometimes mistaken ideas as to which activities are profitable.

Example of Use of Data

Here is an example of the type of answer that can be provided by proper functional breakdown of income and expenses. One of the operators in the pilot study found that two of his service functions were not providing adequate income.

In one, the cost of performing the service was closely tied to the volume of work done; that is, as volume increased, the cost increased. In this case he felt it necessary to raise the price charged for the service. Total income increased—although a small portion of his volume was lost—and total expenses decreased—because of the lost volume—giving an increased profit from that service.

The total cost of performing the other service was not significantly affected by changes in volume. Here the operator reduced the price charged to make his prices more competitive and expended some additional effort to attract volume. Despite the reduction in price, his total income increased while expenses remained substantially the same, thus increasing profit from that service.

Some Other Possibilities of Use

Opportunities for improving profits, which may be disclosed by good records, are not limited to finding remedies for unsatisfactory conditions. Those areas or lines of product that show satisfactory profit ratios can often be made to produce even more profit by concentrating more effort on them.

Monthly operating statements provide timely data for detecting trouble spots in the operation and taking remedial action before a bad situation gets out of hand. For example, if one segment of the business or one class of expenses gets out of line, immediate attention can be directed to finding what is causing the trouble and what action is needed to correct it. If the data is not available until a year or more after the event occurs, effective remedial action is impossible.

Month-to-month comparisons provide a basis for determining how changes in the level of operations affect income, costs, and expenses. This is especially important for a highly seasonal operation such as locker rentals and customer service.

An alert management not only looks to the records of past activities, but also is constantly searching for better ways to do things. This requires evaluation of possible future alternatives to determine whether they promise to improve profits. Past records can provide a starting point for such evaluation. With a knowledge of the behavior of past costs under varying conditions, it is possible to project this behavior into the future and thereby determine what costs would be under certain conditions.

Chapter VI of this manual, beginning on page 95, is devoted to a discussion of decision making and the type of information needed to make certain decisions. The author suggests that the owner-manager read chapter VI before deciding whether to use the methods described herein.

Improving the Accounting System

It is assumed that the business which would use the methods described in this manual already has a basic system[3] of accounting in operation. Therefore, this manual is designed to provide ways of improving the information produced by those records rather than eliminating them and starting anew. This is not a uniform accounting system which must be adopted in total to be useful. Rather, it is a discussion of analysis techniques, recording procedures, and statements which can be used to the extent considered desirable.

It will probably be necessary to introduce some modifications in the system presently in use, but these modifications should not be too extensive. The major changes will be in type and frequency of reports prepared, and in the expense

[3] Many of the businesses will have adopted the uniform system provided for the industry entitled Guide to Uniform Accounting for Locker and Freezer Provisioners by Thornton W. Snead, Sr., and Paul C. Wilkins. Agriculture Handbook 163, Farmer Cooperative Service, U. S. Department of Agriculture. This manual can be used with the uniform system to provide more data for management decision making.

accounts which will probably need to be modified to provide for a breakdown by function.

This manual does not discuss processes of recordkeeping for accounts receivable, customer billing, and other areas which do not directly affect the information needed for the statements proposed herein. In most cases these are already adequately provided for. If not, information concerning them is readily available from other sources.

At this point a word of caution is in order. The introduction of new methods into a business situation will undoubtedly create some initial confusion and possibly employee ill will. If the manager becomes discouraged when this happens and does not carry the system through, he will not reap the benefits of the information that can be made available.

The manager should first decide whether or not he needs and wants the information. Assuming that he does, he should explain the situation to his employees before making the changes. He should also determine to operate the new system for at least a year before making any evaluation of its worth to him. If this is done, few managers will ever again be satisfied with less adequate data from their records.

Chapter II
The Statements Illustrated

The primary purpose of this manual is to present analytical methods that can be used by managers of locker and related plants to better understand and direct their businesses. No matter how much information is available or how valuable that information might be, it will not be used and, hence, will have no value unless it is presented to the management in an understandable and useful form.

There is no single format for statement presentation which will serve all purposes; nor is there one which has more merit for every purpose than the alternatives that might be available. This means that the person who is setting up a set of statements for a particular business must examine carefully the operations of that business and the needs of the management before attempting to design the statements.

For a manual of this type to be of real value, it must fit the specific needs of the group for which it is intended. Thus, it must show methods that are specifically applicable to these businesses and, through illustration and discussion, must make it possible to use those methods. For this reason, a particular format for statement presentation has been selected for illustration and discussion. This format is considered best for presenting information about the complex operations of locker and related industries. Modifications which will be needed to tailor the format to the specific needs of particular businesses within the industry are presented. Thereby adequate flexibility is retained.

Statement Format

The statements recommended for most effective presentation of the information produced by the analytical methods described in this manual are illustrated in exhibits I through VIII,[4] pages 8-23.

Description of Statements

Exhibit I, the Income and Expense Summary, presents an overall picture of the operations of the business, without detail. The total income from each important income-producing activity is shown and immediately reduced by the cost or expenses which can be reasonably associated with that activity. This provides a picture of the amount that each income-producing activity is contributing to cover nonallocable expenses—that is, expenses that cannot be reasonably assigned to a specific income-producing activity—and to provide a profit.

The expenses shown in total in the Summary are shown in detail in Exhibits II through VII. For example, the Income and Expense Summary (exhibit I) shows total storage expense for the month of December of $560.85. Exhibit II shows the detailed expense items that comprise that total. Note that the total of all the expense items shown on exhibit II for the month of December is $560.85.

Exhibit VIII shows the total expenses incurred in the entire business operation without regard to the department in which they were incurred. This is typical of the expense section of Income and Expense Statements which are prepared without departmentalization.

In this setup expenses incurred in the business are allocated (assigned) to one or more functions or departments within the business. The methods of allocation are discussed in detail in chapter III, but, in essence, the cost of goods or services are assigned to the department or function that uses them. For example, the total cost of labor for the business operation is shown on the Total Expense Report and each of the Functional Expense Reports (exhibits II through VII) show the portion of the labor that was used in that function. To illustrate: Total plant labor for the month of December is $3,834.35 (exhibit VIII). This amount is allocated to the various functions as follows:

Storage Expense (exhibit II)	$ 66.37
Processing Expense (exhibit III)	2,571.23
Curing & Smoking Expense (exhibit IV)	550.43
Slaughter Expense (exhibit V)	325.80
Selling Expense (exhibit VI)	182.31
Administrative Expense (exhibit VII)	138.21
Total (exhibit VIII)	$3,834.35

This same relationship exists for each expense item in the report and for each month.

Why Use This Format?

Although no specific form of presentation is essential to the analysis methods described in this manual, the merits of the presentation used here should be considered before other methods of presentation are adopted. The terms "form

[4] The statements presented in exhibits I through VIII are for illustration purposes only. They are composite figures and do not represent the operations of any business.

of statement presentation" and "format" used here refer to the arrangement of the accounts and amounts on the statements rather than the type of paper on which they are prepared.

The fundamental criterion is that the statements show the most important information about the business without being cluttered with unnecessary detail. The most important information about the operating activity of any business can be summarized in the answer to two questions. First, how much income is being produced by the various income-producing activities and what is it costing to produce that income? Second, what changes occur in the income and expense from period to period and what causes these changes?

These questions are best answered by the form of presentation used here. Each income-producing activity sufficiently important to warrant separation is shown, with the income and costs of producing that income matched, so that the amount contributed towards nonallocable cost and towards profit is shown. The relative importance of the various income-producing activities is emphasized by showing all the activities on the same statement. The changes that occur from month to month are emphasized by showing the amounts side by side so that changes can be easily spotted.

Details of the changes in expenses and volume are available on the Functional Expense Reports prepared for each department. Although this does not provide the answer to "What caused the change?", it gives the starting point for an analysis to determine the answer, which is all that can be provided by accounting statements.

The details making up cost of sales are not presented as a part of the formal statements. These have been omitted to avoid cluttering the Income and Expense Summary. It is much more significant to see the amount of income, the amount of cost, and the percentage relationship between the two than it is to see the detailed composition of the cost. If it is considered desirable to show this detail because of the importance of some element of the cost, this should be done in separate schedules in the same way that expense details are shown. These schedules could take the form of the worksheet for computing cost of sales illustrated in Exhibit XXVII, page 91.

This basic statement format can be modified to fit the specific situation of any business similar in nature and still retain its essential characteristics. Certain modifications to take care of special situations are suggested in subsequent parts of the manual. The basic characteristics that should be retained are: Summarizing the activity of the entire business on one summary statement; showing the income from each basic activity compared to the cost applicable to that activity; showing the month-to-month activity side-by-side for comparison purposes; and presenting detailed information on separate statements or schedules so that the overall picture is not obscured.

One further point should be emphasized here. Showing the expenses of operation in detail by function, and in total, on a comparative basis provides an excellent opportunity to study and analyze operating costs compared to volume of operations for each element of the business. This study of expenses by the manager of the business can be the most productive benefit of the entire system.

Any other basic format for statement presentation eliminates one or more of the advantages of the format illustrated.

Exhibit I

Month	Month	Month	Month	Month	Month	Month	Month
January	February	March	April	May	June	July	August
$1,842.50	$1,759.60	$1,630.00	$1,908.00	$2,116.50	$2,324.00	$2,176.60	$1,912.00
1,588.24	1,516.26	1,405.06	1,644.69	1,824.42	2,003.29	1,876.14	1,648.14
254.26	242.74	224.94	263.31	292.08	320.71	300.46	263.86
13.8%	13.8%	13.8%	13.8%	13.8%	13.8%	13.8%	13.8%
4,698.75	4,471.72	4,211.96	5,489.79	4,379.95	5,388.20	6,150.70	4,842.60
6,079.68	5,969.66	6,733.31	5,260.74	5,781.15	4,955.75	4,735.35	4,448.95
519.07	502.06	478.65	429.05	598.80	432.45	415.35	398.65
7.9%	7.8%	7.7%	7.5%	9.4%	8.0%	8.1%	8.1%
320.60	290.30	292.60	322.29	312.75	410.30	304.85	256.30
280.35	250.05	249.25	277.04	271.50	344.60	240.00	210.80
40.25	40.25	43.35	45.25	41.25	65.70	64.85	45.50
12.6%	13.9%	14.8%	14.0%	13.2%	16.0%	21.3%	17.8%
192.56	264.72	232.60	123.62	199.55	138.92	246.00	200.45
155.26	214.07	185.85	92.26	141.65	101.40	193.40	152.80
37.30	52.65	46.75	31.36	57.90	37.52	52.60	47.65
19.4%	19.7%	20.1%	25.4%	29.0%	27.0%	21.4%	23.8%
850.88	837.70	793.69	768.97	990.08	856.38	833.16	750.66
1,262.50	1,325.60	1,160.80	1,012.50	1,071.16	940.28	780.25	821.60
486.72	496.05	524.68	534.56	510.30	549.49	514.40	519.90
776.78	829.55	636.12	477.94	560.85	390.79	266.85	301.70
61.5%	62.6%	54.8%	47.2%	52.4%	41.6%	34.1%	36.7%
5,290.26	3,138.36	1,668.93	1,177.76	954.00	902.80	725.55	639.85
2,921.02	1,899.45	1,391.50	1,130.32	1,126.59	1,337.09	1,286.08	1,197.76
2,309.24	1,298.91	277.43	47.44	(172.59)	(434.29)	(560.53)	(557.91)
44.2%	39.5%	16.7%	4.0%	-	-	-	-
1,443.80	1,025.05	689.75	706.10	501.65	396.30	315.25	501.25
842.85	634.89	440.80	484.04	441.09	350.78	322.19	317.24
600.95	388.16	248.95	222.06	60.56	45.52	(6.94)	184.01
41.6%	37.9%	36.1%	31.4%	12.1%	11.5%	-	36.7%
862.68	735.96	506.90	374.40	401.12	530.08	645.12	484.32
492.63	453.00	396.38	290.75	388.18	428.88	452.84	319.24
370.05	282.96	170.52	83.65	12.94	101.20	192.28	164.98
42.9%	38.4%	33.6%	22.3%	3.2%	19.1%	29.8%	34.1%
4,057.02	2,739.58	1,393.02	831.09	461.76	103.22	(109.34)	92.78
4,907.90	3,577.28	2,126.71	1,600.06	1,451.79	959.60	723.82	843.44
708.00	673.42	692.32	713.19	715.60	608.48	559.95	582.85
823.69	873.27	1,054.37	882.55	785.60	965.98	745.45	773.15
1,531.69	1,546.69	1,747.19	1,595.74	1,501.20	1,574.46	1,305.40	1,356.00
3,376.21	2,030.59	379.52	4.32	(49.41)	(614.86)	(581.58)	(512.56)
			2.58	11.99	(2.62)	(3.36)	4.19
(90.55)	(90.55)	(90.55)	(90.55)	(90.55)	(90.55)	(45.55)	(45.55)
			(50.00)				
3,285.66	1,940.04	288.97	(133.65)	(127.97)	(703.03)	(630.49)	(553.98)
1,951.40	2,040.30	2,272.62	2,480.27	2,982.09	3,638.18	1,105.18	570.77
12,460.70	13,650.60	13,111.41	14,206.52	12,692.10	10,491.99	4,260.04	4,958.88
5,540.10	4,670.74	5,641.42	5,028.61	5,058.03	5,594.34	5,304.17	5,784.18
5,462.14	8,431.60	7,864.72	7,575.74	6,491.14	7,113.08	5,595.26	5,098.79
4,562.82	5,866.54	6486.65	4,395.70	3,448.65	3,817.60	5,310.77	4,083.64
18,110.00	18,110.00	18,110.00	18,110.00	18,110.00	18,110.00	9,110.00	9,110.00

INCOME AND EXPENSE SUMMARY

Month September	Month October	Month November	Month December		Year to date
$2,128.50	$1,942.50	$2,296.00	$2,230.50	Sales - Hams	$24,266.00
1,834.77	1,674.44	1,979.15	1,922.69	Cost of sales - Hams	20,917.29
293.73	268.06	316.85	307.81	Gross profit - Hams	3,348.71
13.8%	13.8%	13.8%	13.8%	Gross profit percentage	13.8%
6,258.95	6,502.10	6,173.20	7,172.85	Sales - Meat	72,840.77
5,656.60	5,991.40	5,746.05	6,411.95	Cost of sales - Meat	66,770.59
602.35	510.70	427.16	760.90	Gross profit - Meat	6,070.18
9.6%	7.9%	6.9%	10.6%	Gross profit percentage	8.3%
284.30	320.10	328.40	371.60	Sales - Frozen foods	3,809.39
246.00	262.40	274.55	330.30	Cost of sales - Frozen foods	3,236.84
38.30	57.70	48.85	41.30	Gross profit - Frozen foods	572.55
13.5%	18.0%	15.1%	11.1%	Gross profit percentage	15.0%
169.40	122.10	190.40	231.20	Sales - Other merchandise	2,313.52
130.00	82.25	146.80	197.15	Cost of sales - Other merchandise	1,792.89
39.40	39.85	43.60	34.05	Gross profit - Other merchandise	520.63
23.3%	32.6%	22.9%	14.7%	Gross profit percentage	22.5%
973.78	876.31	836.45	1,144.06	Total gross profit on sales	10512.07
997.95	1,019.10	1,069.90	1,326.00	Storage income	12,787.63
491.70	541.90	470.90	560.85	Storage expenses (from expense report)	6,200.45
506.25	477.20	599.00	765.15	Contribution to income	6,587.18
50.7%	46.8%	56.0%	57.7%	Contribution percentage	51.5%
1,036.25	2,144.00	3,917.50	5,765.58	Processing income	27,300.81
1,428.36	1,785.55	2,428.31	3,448.11	Processing expenses (from expense report)	21,380.14
(392.11)	358.45	1,489.19	2,317.44	Contribution to income	5,920.67
-	16.7%	38.0%	40.2%	Contribution percentage	21.7%
610.25	823.85	1,121.30	1,661.10	Curing and smoking income	9,793.65
445.76	648.54	739.12	956.41	Curing and smoking expenses (from expense report)	6,623.71
164.49	175.31	382.18	704.69	Contribution to income	3,169.94
27.0%	21.3%	34.1%	42.4%	Contribution percentage	32.4%
275.38	538.04	718.25	804.38	Slaughter income	6,876.43
204.59	312.29	385.34	462.15	Slaughter expenses (from expense report)	4,526.27
70.69	225.75	332.91	342.23	Contribution to income	2,350.16
25.7%	42.0%	46.4%	42.5%	Contribution percentage	34.2%
349.32	1,236.71	2,803.28	4,129.51	Total contribution from service income	18,027.95
1,323.10	2,113.02	3,689.78	5,273.57	Total contribution - Sales and service	28,640.02
				Less: Expenses not allocated:	
565.30	599.85	675.60	681.85	Selling expenses (from expense report)	7782.91
836.80	677.35	733.16	1,197.90	Administrative expenses (from expense report)	10,849.26
1,402.10	1,277.20	1,408.75	1,885.75	Total expenses not allocated	18,132.17
(79.00)	835.82	2,280.98	3,387.82	Net income from operations	10,407.85
				Other income (add)	
(1.10)	3.62	(1.71)	2.10	Cash over and short	15.69
				Other outgo (deduct)	
(45.65)	(45.65)	(45.65)	(76.55)	Interest expense	(846.60)
(50.00)			(150.00)	Donations	(250.00)
(175.65)	793.89	2,183.72	3,164.37	Net income before taxes	9,326.94
				Comparison of significant current items	
1,085.68	1,120.62	920.71	980.92	Cash on hand and in bank	
9,692.63	10,172.72	11,260.83	13,450.71	Accounts receivable - Customers	
6,757.39	5,862.90	6,660.72	6,676.72	Inventory - Hams	
5,227.93	6,338.80	7,264.81	8,284.91	Inventory - Other	
5,033.89	6,540.20	4,264.20	3,236.41	Accounts payable	
9,110.00	9,110.00	9,110.00	15,110.00	Notes payable	

Exhibit II

Storage	Storage	Storage	Storage	Storage	Storage	Storage	Storage
Month	Month	Month	Month	Month	Month	Month	Month
January	Febuary	March	April	May	June	July	August
$58.82	$59.60	$62.01	$67.60	$58.50	$60.45	$61.17	$62.39
			1.03				
86.28	88.27	84.47	109.03	71.12	95.51	97.96	100.35
43.14	44.13	42.24	54.52	23.71	31.84	32.66	33.45
33.20	26.32	24.24	34.80	88.96	45.04	40.64	51.08
5.21	4.60	51.41	4.16	7.32	49.52	12.23	11.92
	14.60					11.30	1.01
109.59	109.59	109.59	109.59	109.59	109.59	109.59	109.59
60.32	60.32	60.32	60.32	60.32	60.32	60.32	60.32
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
39.91	39.91	39.91	39.91	39.91	39.91	39.91	39.91
2.35	2.38	2.48	2.70	2.34	2.42	2.45	2.50
31.25	31.25	31.25	31.25	31.25	31.25	31.25	31.25
.62	1.15	1.22	.68	.26	.36	.42	.56
5.03	3.93	5.54	8.97	7.02	13.28	4.50	5.57
485.72	496.05	524.68	534.56	510.30	549.49	514.40	519.90
485.72	496.05	524.68	534.56	510.30	549.49	514.40	519.90
.19	.19	.21	.21	.20	.22	.20	.20

Expense Report

Function: Storage | Storage | Storage | Storage

Month September	Month October	Month November	Month December	%		%	Year to date
$61.10	$62.68	$60.21	$66.37	11.8	Plant labor	12.0	$740.90
.66	1.72	9.66			Processing supplies used	.2	13.07
					Curing supplies used		
					Office and selling supplies		
99.38	84.65	82.45	85.47	15.2	Power and lights	17.5	1,084.94
33.12	42.33	41.23	42.73	7.6	Heat and water	7.5	465.10
21.02	54.79	13.55	87.90	15.7	Repairs and maintenance - Building	8.4	521.54
17.97	3.98	3.82	19.03	3.4	Repairs and maintenance - M & E	3.1	191.17
.19	28.66	.30			Repairs and maintenance - Truck	.9	56.06
109.59	109.59	109.59	109.59	19.5	Depreciation - Building	21.2	1,315.08
60.32	60.32	60.32	60.32	10.8	Depreciation - M & E	11.7	723.84
10.00	10.00	10.00	10.00	1.8	Depreciation - Truck	1.9	120.00
39.91	39.91	39.91	39.91	7.1	Property taxes	7.7	478.92
2.44	2.51	2.41	2.66	.5	Payroll taxes	.5	29.64
					Other taxes and licenses		
31.25	31.25	31.25	31.25	5.6	Insurance	6.0	375.00
.46	.56	.40	.76	.1	Workman's compensation	.1	7.45
					Laundry		
					Salaries - Officers		
					Salaries - Office		
					Salaries - Selling		
					Advertising and promotion		
					Travel and entertainment		
					Auto and truck expenses		
					Postage, shipping and mailing		
					Dues and subscriptions		
					Telephone and telegraph		
					Legal and accounting		
4.29	8.95	5.80	4.86	.9	Miscellaneous expenses	.3	77.74
491.70	541.90	470.90	560.85	100.0	TOTAL EXPENSES	100.0	6,200.45
					Expenses charged to plant-owned product		
491.70	541.90	470.90	560.85	100.0	NET EXPENSES	100.0	6,200.45

VOLUME

Computation of expenses charged to plant-owned product

				Volume of plant-owned products
				Expenses charged (volume X expenses per unit)
				(Per sq. ft.)
.19	.21	.19	.22	Unit cost (total expenses divided by total volume) .243

Exhibit III

Processing	Processing	Processing	Processing	Processing	Processing	Processing	Processing
Month	Month	Month	Month	Month	Month	Month	Month
January	February	March	April	May	June	July	August
$2,450.60	$1,930.40	$1,420.20	$1,161.39	$1,101.71	$1,060.03	$1,116.01	$993.04
760.60	408.20	205.40	182.90	193.60	193.23	205.53	193.20
70.93	65.87	67.60	84.95	48.21	75.92	57.39	70.69
35.47	32.93	33.80	42.17	16.08	25.30	19.13	23.56
42.50	28.60	38.71	34.33	71.91	31.06	26.80	49.63
33.61	24.24	19.61	17.78	11.30	32.36	13.71	23.90
31.36	22.41	15.60	11.85	21.69	38.80	15.34	13.87
24.42	24.42	24.42	24.42	24.42	24.42	24.42	24.42
42.97	42.97	42.97	42.97	42.97	42.97	42.97	42.97
50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
28.35	28.35	28.35	28.35	28.35	28.35	28.35	28.35
98.02	77.22	56.81	46.45	44.07	42.40	44.64	39.72
22.12	18.32	15.60	12.02	11.26	11.41	12.18	10.37
37.10	37.10	37.10	37.10	37.10	37.10	37.10	37.10
25.44	24.69	25.07	21.04	18.62	19.34	18.81	13.89
52.50	48.41	42.40	38.83	36.89	26.07	30.43	28.43
202.42	190.60	110.12	95.18	111.03	138.20	120.00	149.60
88.72	26.66	10.12	8.12	17.23	16.25	16.90	20.15
12.07	2.33	8.54	9.17	22.99	39.57		
4,109.20	3,088.72	2,252.42	1,948.31	1,909.43	1,932.78	1,879.71	1,807.39
1,188.18	1,184.27	860.92	817.99	782.84	595.69	593.63	609.63
2921.02	1,899.45	1,391.50	1,130.32	1,126.59	1,337.09	1,286.08	1,197.76
95,504	60,640	36,149	27,963	24,233	23,360	20,426	18,996
28,290	28,197	20,498	19,476	18,639	14,183	14,134	14,515
1,188.18	1,184.27	860.92	817.99	782.84	595.69	593.63	609.63
.043	.051	.062	.070	.079	.083	.092	.095

Expense Report

Function: Processing | Processing | Processing | Processing

Month September	Month October	Month November	Month December	%		%	Year to date
$1,079.31	$1,310.68	$1,825.78	$2,571.23	59.5	Plant labor	58.5	$18,020.32
359.39	427.59	531.15	858.63	19.9	Processing supplies used	14.7	4,519.42
					Curing supplies used		
					Office and selling supplies		
67.49	47.91	54.76	68.39	1.6	Power and lights	2.5	779.51
22.49	23.96	27.38	34.20	.8	Heat and water	1.1	336.47
20.96	31.32	15.84	78.22	1.8	Repairs and maintenance - Building	1.5	469.88
30.40	20.65	13.63	15.06	.3	Repairs and maintenance - M & E	.8	256.20
47.24	26.87	33.61	24.84	.6	Repairs and maintenance - Truck	1.0	302.98
24.42	24.42	24.42	24.42	1.3	Depreciation - Building	2.1	293.04
42.97	42.97	42.97	42.97	1.0	Depreciation - M & E	1.7	515.64
50.00	50.00	50.00	50.00	1.2	Depreciation - Truck	1.9	600.00
28.35	28.35	28.35	28.35	.6	Property taxes	1.1	340.20
43.17	52.43	73.09	102.85	2.4	Payroll taxes	2.3	720.81
12.19	15.22	18.41	23.52	.5	Other taxes and licenses	.6	182.62
37.10	37.10	37.10	37.10	.8	Insurance	1.4	445.20
15.19	27.74	20.74	40.73	.9	Workman's compensation	.9	271.30
22.89	50.39	49.53	51.65	1.2	Laundry	1.5	473.42
157.20	174.60	189.53	167.18	3.9	Salaries - Officers	6.9	1,805.61
15.28	22.69	39.93	99.81	2.3	Salaries - Office	1.2	381.86
					Salaries - Selling		
					Advertising and promotion		
					Travel and entertainment		
					Auto and truck expenses		
					Postage, shipping and mailing		
					Dues and subscriptions		
					Telephone and telegraph		
					Legal and accounting		
	10.95		4.21	.1	Miscellaneous expenses	.4	109.89
2,076.04	2,425.84	3,076.16	4,323.31	100.0	TOTAL EXPENSES	100.0	30,824.31
647.68	640.29	647.85	875.20	20.2	Expenses charged to plant-owned product	30.6	9,444.17
1,428.36	1,785.55	2,428.31	3,448.11	79.8	NET EXPENSES	69.4	21,380.14
26,604	44,066	73,625	104,426		VOLUME		554,992
					Computation of expenses charged to plant-owned product		
15,421	15,245	15,425	20,838		Volume of plant-owned products		224,861
					(.042)		
647.68	640.29	647.85	875.20		Expenses charged (volume X expenses per unit)		9,444.17
.081	.055	.042	.041		Unit cost (total expenses divided by total volume)		.056

Exhibit IV

Curing and smoking	Curing and smoking	Curing and smoking	Curing and smoking	Curing and smoking	Curing and smoking	Curing and smoking	Curing and smoking
Month	Month	Month	Month	Month	Month	Month	Month
January	February	March	April	May	June	July	August
$476.75	$362.54	$277.86	$265.55	$201.40	$157.56	$153.49	$154.50
			35.22	21.81			
180.88	126.68	76.50	62.96	90.11	58.67	58.49	76.84
30.56	27.74	25.92	35.18	18.97	26.51	27.92	26.47
15.28	13.87	12.96	17.59	6.12	8.83	9.10	8.82
26.62	34.40	10.20	15.77	45.41	36.61	17.14	24.75
3.86	7.92	2.40	1.93	13.41	12.61	3.75	6.18
7.78	1.88	5.62	6.04	.95	2.09	4.63	3.29
33.05	33.05	33.05	33.05	33.05	33.05	33.05	33.05
24.64	24.64	24.64	24.64	24.64	24.64	24.64	24.64
20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
22.19	22.19	22.19	22.19	22.19	22.19	22.19	22.19
19.07	14.50	11.11	10.62	8.06	6.30	6.14	6.18
3.42	2.78	2.60	2.45	2.45	2.33	1.87	1.72
13.78	13.78	13.78	13.78	13.78	13.78	13.78	13.78
5.31	5.95	4.82	3.40	1.90	1.90	3.20	3.11
8.75	7.42	6.64	18.61	5.44	3.40	3.50	2.55
60.72	38.78	26.08	22.06	19.50	18.75	29.25	27.04
4.24	3.62	2.85	2.79	2.08	2.74	2.43	1.35
4.24	4.37	5.67	5.17	8.96	30.79	9.16	3.13
961.14	766.11	584.89	618.98	559.63	482.75	442.63	459.59
118.29	131.22	144.09	134.94	118.54	131.97	120.44	142.35
842.85	634.89	440.80	484.04	441.09	350.78	322.19	317.24
32,692	24,694	18,443	18,475	13,857	12,183	10,190	14,617
3,816	4,233	4,648	4,353	3,824	4,257	3,885	4,592
118.29	131.22	144.09	134.94	118.54	131.97	120.44	142.35
.030	.031	.032	.034	.040	.040	.043	.031

Expense Report

Function

Curing and smoking	Curing and smoking	Curing and smoking	Curing and smoking				
Month	Month	Month	Month	%		%	Year to date
September	October	November	December				
$230.64	$313.41	$354.95	$550.43	52.1	Plant labor	43.0	$3499.08
45.32					Processing supplies used	1.8	102.35
91.21	201.41	236.60	180.47	17.1	Curing supplies used	17.7	1,440.82
					Office and selling supplies		
29.90	24.61	26.05	30.31	2.9	Power and lights	4.0	328.94
9.96	12.30	13.03	15.15	1.4	Heat and water	1.8	143.01
13.65	22.96	9.48	26.77	2.5	Repairs and maintenance - Building	3.5	283.76
1.60	1.85	1.78	1.58	.1	Repairs and maintenance - M & E	.7	58.87
8.61	2.31	7.20	4.86	.5	Repairs and maintenance - Truck	.7	55.16
33.05	33.05	33.05	33.05	3.1	Depreciation - Building	4.9	396.60
24.64	24.64	24.64	24.64	2.3	Depreciation - M & E	3.6	295.68
20.00	20.00	20.00	20.00	1.9	Depreciation - Truck	3.0	240.00
22.19	22.19	22.19	22.19	2.1	Property taxes	3.3	266.28
9.23	12.54	14.20	22.02	2.1	Payroll taxes	1.7	139.97
3.29	4.05	4.25	7.61	.7	Other taxes and licenses	.5	38.30
13.78	13.78	13.78	13.78	1.3	Insurance	2.0	165.36
3.08	2.97	4.10	6.76	.6	Workman's compensation	.6	46.49
2.41	5.74	7.93	9.33	.9	Laundry	1.0	81.72
19.10	31.88	43.69	74.61	7.1	Salaries - Officers	5.0	411.46
					Salaries - Office		
					Salaries - Selling		
					Advertising and promotion		
					Travel and entertainment		
1.17	10.47	2.13	4.04	.4	Auto and truck expenses	.5	39.91
					Postage, shipping and mailing		
					Dues and subscriptions		
					Telephone and telegraph		
					Legal and accounting		
1.32	2.62	9.13	9.88	.9	Miscellaneous expenses	1.2	94.44
584.05	762.78	848.18	1,057.47	100.0	TOTAL EXPENSES	100.0	8,128.20
138.29	114.24	109.06	101.06	9.6	Expenses charged to plant-owned product	18.5	1,504.49
445.76	648.54	739.12	956.41	90.4	NET EXPENSES	81.5	6,623.71
16,666	20,162	25,944	36,482		VOLUME		244,405
					Computation of expenses charged to plant-owned product		
4,461	3,685	3,518	3,260		Volume of plant-owned products		48,532
					(.031)		
138.29	114.24	109.06	101.06		Expenses charged (volume X expenses per unit)		1,504.49
.035	.038	.033	.029		Unit cost (total expenses divided by total volume)		.033

Exhibit V

Slaughter	Slaughter	Slaughter	Slaughter	Slaughter	Slaughter	Slaughter	Slaughter
Month	Month	Month	Month	Month	Month	Month	Month
January	February	March	April	May	June	July	August
$341.20	$297.60	$215.20	$187.95	$204.63	$276.94	$342.86	$236.26
79.14	71.90	51.20	44.84	68.80	92.41	75.10	51.30
36.13	29.00	27.33	23.47	18.14	25.30	20.68	24.94
18.07	14.50	13.67	11.73	6.04	8.43	6.89	8.31
7.70	6.10		8.90	3.39	1.98	6.81	9.40
21.10	31.00	15.10	7.29	76.87	8.64	4.60	1.37
7.20	3.96	8.30	4.97	11.97	9.81	11.12	9.32
12.70	12.70	12.70	12.70	12.70	12.70	12.70	12.70
8.04	8.04	8.04	8.04	8.04	8.04	8.04	8.04
50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
21.47	21.47	21.47	21.47	21.47	21.47	21.47	21.47
13.65	11.90	8.61	7.52	8.19	11.08	13.71	9.45
1.50	1.61	3.00	2.09	3.00	4.51	5.68	3.18
15.88	15.88	15.88	15.88	15.88	15.88	15.88	15.88
8.53	7.44	5.38	4.70	5.12	6.29	4.40	5.91
5.06	3.48	2.50	1.57	2.80	2.91	3.42	2.60
36.70	51.41	38.50	18.88	16.10	36.14	23.33	20.52
1.86	1.75	1.45	1.75	1.87	1.65	1.65	1.65
.22	3.76	11.15	27.98	10.73			13.98
686.15	643.50	509.68	461.25	545.74	594.18	628.34	506.28
193.52	190.50	173.30	170.50	157.56	165.30	175.50	187.04
492.63	453.00	336.38	290.75	388.18	428.88	452.84	319.24
36,220.	32,170	24,262	20,045	20,220.	24,375	28,625	24,251
9,676	9,525	8,665	8,525	7,878	8,265	8,775	9,352
193.52	190.50	173.30	170.50	157.56	165.30	175.50	187.04
.019	.020	.021	.023	.027	.024	.022	.021

Expense Report

Slaughter	Slaughter	Slaughter	Slaughter	Function			
Month September	Month October	Month November	Month December	%		%	Year to date
$185.57	$219.11	$292.21	$325.80	52.0	Plant labor	47.1	$3,125.33
41.02	23.51	47.44	45.46	7.3	Processing supplies used	10.4	691.62
					Curing supplies used		
					Office and selling supplies		
17.96	26.92	20.07	44.13	7.1	Power and lights	4.7	314.07
5.99	13.46	10.04	22.07	3.5	Heat and water	2.1	139.20
	.73		1.47	.2	Repairs and maintenance - Building	.7	46.48
1.25	3.51	3.03	8.05	1.3	Repairs and maintenance - M & E	2.7	181.81
8.20	8.86	4.67	3.96	.6	Repairs and maintenance - Truck	1.4	91.84
12.70	12.70	12.70	12.70	2.0	Depreciation - Building	2.3	152.40
8.04	8.04	8.04	8.04	1.3	Depreciation - M & E	1.5	96.48
50.00	50.00	50.00	50.00	8.0	Depreciation - Truck	9.0	600.00
21.47	21.47	21.47	21.47	3.4	Property taxes	3.9	257.64
7.42	8.76	11.69	13.03	2.1	Payroll taxes	1.9	125.01
5.07	1.46	1.34	.73	.1	Other taxes and licenses	.5	33.17
15.88	15.88	15.88	15.88	2.5	Insurance	2.9	190.56
4.64	5.48	3.14	7.98	1.3	Workman's compensation	1.0	69.01
2.35	3.28	3.44	4.23	.7	Laundry	.6	37.66
					Salaries - Officers		
					Salaries - Office		
					Salaries - Selling		
					Advertising and promotion		
					Travel and entertainment		
22.20	38.72	32.03	38.84	6.1	Auto and truck expenses	5.6	373.37
					Postage, shipping and mailing		
					Dues and subscriptions		
1.94	1.65	1.65	1.81	.3	Telephone and telegraph	.3	20.88
					Legal and accounting		
13.89	11.65				Miscellaneous expenses	1.4	93.36
425.59	474.69	538.84	625.65	100.0	TOTAL EXPENSES	100.0	6,639.89
221.00	162.40	153.50	163.50	26.1	Expenses charged to plant-owned product	31.8	2,113.62
204.59	312.29	385.34	462.15	73.9	NET EXPENSES	68.2	4,526.27
19,520	24,675	29,775	32,925		VOLUME		317,263
					Computation of expenses charged to plant-owned product		
11,050	8,120	7,675	8,175		Volume of plant-owned products		105,681
					(.020)		
221.00	162.40	153.50	163.50		Expenses charged (volume X expenses per unit)		2,113.62
.022	.019	.018	.019		Unit cost (total expenses divided by total volume)		.021

Exhibit VI

Selling	Selling	Selling	Selling	Selling	Selling	Selling	Selling
Month	Month	Month	Month	Month	Month	Month	Month
January	February	March	April	May	June	July	August
$202.52	$184.82	$172.60	$164.25	$163.11	$120.18	$110.41	$137.46
12.22	18.32	26.60	55.68	36.65	14.43	2.30	2.95
6.44	5.81	7.51	8.59	4.71	4.68	4.77	2.02
3.21	2.90	3.75	4.29	1.57	1.56	1.60	.68
11.21	8.12	6.36	5.57	19.29	6.19	3.40	6.85
5.32	6.72	11.80	6.71	6.09	14.13	1.73	1.18
2.82	3.78	4.60	5.54	3.23	5.40	.06	2.35
27.88	27.88	27.88	27.88	27.88	27.88	27.88	27.88
5.69	5.69	5.69	5.69	5.69	5.69	5.69	5.69
10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85
8.10	7.39	6.90	6.57	6.52	4.81	4.42	5.50
9.24	8.30	6.20	7.37	37.50	9.32	8.11	11.54
25.76	25.76	25.76	25.76	25.76	25.76	25.76	25.76
10.83	12.18	12.65	10.54	9.63	8.35	9.74	11.16
4.82	6.66	15.62	4.58	3.33	3.30	3.85	3.05
124.48	112.32	132.24	141.32	138.68	108.07	128.25	136.34
2.92	3.84	7.62	6.01	5.45	6.08	9.07	11.72
68.60	80.20	79.60	96.07	78.63	74.18	85.87	74.06
102.60	98.72	84.20	78.60	82.73	76.46	68.15	61.52
47.62	31.67	28.64	19.78	22.82	35.47	23.44	23.66
4.02	3.82	3.60	2.61	2.96	3.27	3.06	3.02
5.85	2.67	7.15	13.93	17.52	37.42	16.54	12.61
708.00	673.42	692.82	713.19	715.60	608.48	559.95	582.85

Expense Report

Function: Selling | Selling | Selling | Selling

Month September	Month October	Month November	Month December	%		%	Year to date
$123.19	$159.32	$160.05	$182.31	24.5	Plant labor	24.2	$1,880.22
					Processing supplies used		
					Curing supplies used		
1.38	18.75	21.56	15.36	2.2	Office and selling supplies	2.9	226.20
3.01	3.09	6.20	5.17	.8	Power and lights	.8	62.00
1.02	1.54	3.11	2.59	.4	Heat and water	.4	27.82
4.65	4.08	3.40	4.70	.7	Repairs and maintenance - Building	1.1	83.82
1.07	6.61	17.21	3.55	.5	Repairs and maintenance - M & E	1.0	82.12
3.69	2.83	2.87	1.59	.2	Repairs and maintenance - Truck	.5	38.76
27.88	27.88	27.88	27.88	4.0	Depreciation - Building	4.3	334.56
5.69	5.69	5.69	5.69	.8	Depreciation - M & E	.9	68.28
10.00	10.00	10.00	10.00	1.5	Depreciation - Truck	1.5	120.00
5.85	5.85	5.85	5.85	.9	Property taxes	.9	70.20
4.93	6.37	6.40	7.29	1.1	Payroll taxes	1.0	75.20
11.16	6.39	6.23	9.03	1.3	Other taxes and licenses	1.7	130.33
25.76	25.76	25.76	25.76	3.7	Insurance	4.0	309.12
11.18	10.33	9.17	9.60	1.4	Workman's compensation	1.6	125.36
2.88	3.74	4.00	4.83	.7	Laundry	.8	60.66
135.27	135.38	111.71	124.35	18.1	Salaries - Officers	19.6	1,528.41
10.10	7.09	4.92	1.81	.8	Salaries - Office	1.0	76.63
72.92	72.68	72.28	67.98	9.9	Salaries - Selling	11.9	923.07
51.85	34.36	87.18	108.93	15.9	Advertising and promotion	12.0	935.30
					Travel and entertainment		
29.98	47.15	73.78	38.83	5.6	Auto and truck expenses	5.3	416.84
					Postage, shipping and mailing		
					Dues and subscriptions		
4.74	4.02	3.56	4.66	.7	Telephone and telegraph	.5	43.94
					Legal and accounting		
29.10	1.00	6.79	20.09	2.9	Miscellaneous expenses	2.1	164.67
565.30	599.85	675.60	687.85	100.0	TOTAL EXPENSES	100.0	7,782.91
					Expenses charged to plant-owned product		
					NET EXPENSES		

VOLUME

Computation of expenses charged to plant-owned product

Volume of plant-owned products

Expenses charged (volume X expenses per unit)

Unit cost (total expenses divided by total volume)

Exhibit VII

Administrative	Administrative	Administrative	Administrative	Administrative	Administrative	Administrative	Administrative
Month	Month	Month	Month	Month	Month	Month	Month
January	February	March	April	May	June	July	August
$147.62	$182.41	$138.62	$207.03	$181.56	$204.36	$174.84	$167.17
63.21	47.62	36.96	40.19	12.33	82.73	15.88	29.15
1.26	1.71	1.17	.96	.99	.93	.93	.55
.62	.85	.58	.48	.33	.30	.31	.19
4.24	3.82	2.94	2.82	7.78	3.30	2.67	4.24
2.62	1.75	18.26	1.34	1.95	15.50	2.59	9.71
4.36	6.41	1.02	1.15	2.10		.03	1.00
13.34	13.34	13.34	13.34	13.34	13.34	13.34	13.34
7.92	7.92	7.92	7.92	7.92	7.92	7.92	7.92
4.94	4.94	4.94	4.94	4.94	4.94	4.94	4.94
5.90	7.30	5.54	8.28	7.26	8.17	6.99	4.29
3.92	6.74	5.65	5.35	5.14	5.24	3.42	4.48
15.43	15.43	15.43	15.43	15.43	15.43	15.43	15.43
3.63	5.41	4.03	4.75	4.48	4.10	6.06	2.81
1.12	1.78	1.80	1.16	.94	1.11	1.35	.89
192.62	242.60	250.78	250.89	238.15	244.42	236.68	194.37
206.60	187.40	138.68	136.31	128.14	132.06	144.86	124.29
							4.50
22.44	21.30	78.40	67.24	20.00	30.81	9.72	15.18
11.22	13.67	12.78	11.15	8.33	10.97	9.71	5.38
26.28	18.62	38.40	16.32	9.74	7.65	3.83	7.11
3.80	7.40	2.60	8.50	8.60	3.35	2.60	8.03
48.28	42.62	36.74	31.38	38.69	37.55	43.27	37.65
		200.00		16.26	62.50		130.00
32.32	32.23	37.79	45.62	51.21	69.30	39.08	40.58
823.69	873.27	1,054.37	882.55	785.60	965.98	745.45	773.15

Expense Report

Function: Administration | Administration | Administration | Administration

Month September	Month October	Month November	Month December	%		%	Year to date
$139.84	$125.93	$146.09	$138.21	11.5	Plant labor	18.3	$1,893.68
					Processing supplies used		
					Curing supplies used		
4.73	38.71	6.23	110.89	2.3	Office and selling supplies	4.7	488.63
1.39	.51	.94	1.50	.1	Power and lights	.1	12.84
.46	.26	.47	.75	.1	Heat and water	.1	5.60
2.93	1.69	1.78	2.78	.2	Repairs and maintenance - Building	.4	40.99
1.61	1.28	1.22	1.09	.1	Repairs and maintenance - M & E	.6	58.92
4.50	.90	3.48	.29		Repairs and maintenance - Truck	.2	25.24
13.34	13.34	13.34	13.34	1.1	Depreciation - Building	1.5	160.08
7.92	7.92	7.92	7.92	.7	Depreciation - M & E	.6	95.04
					Depreciation - Truck		
4.94	4.94	4.94	4.94	.4	Property taxes	.9	59.28
5.59	5.04	5.84	5.53	.5	Payroll taxes	.7	75.73
3.44	4.09	4.35	74.38	6.2	Other taxes and licenses	1.2	126.20
15.43	15.43	15.43	15.43	1.3	Insurance	1.8	185.16
2.83	3.06	3.29	3.61	.3	Workman's compensation	.5	47.06
.69	1.25	1.22	1.60	.1	Laundry	.1	14.91
197.88	189.40	186.32	238.50	19.9	Salaries - Officers	25.7	2,662.61
121.14	111.84	111.92	212.06	17.7	Salaries - Office	17.0	1,755.30
					Salaries - Selling		
11.80					Advertising and promotion	.2	16.30
161.19	19.14	51.17	183.12	11.1	Travel and entertainment	6.1	629.71
26.40	41.88	8.53	6.73	.6	Auto and truck expenses	1.6	166.75
16.25	9.08	5.15	28.24	2.4	Postage, shipping and mailing	1.8	186.67
26.21	15.54	1.35	20.36	1.7	Dues and subscriptions	1.0	108.39
33.39	36.49	58.69	36.17	3.0	Telephone and telegraph	4.7	480.92
		50.00			Legal and accounting	4.4	458.75
32.90	29.63	43.48	140.47	11.7	Miscellaneous expenses	5.8	594.56
836.80	677.35	733.15	1,197.90	100.0	TOTAL EXPENSES	100.0	10,349.26
					Expenses charged to plant-owned product		
					NET EXPENSES		

VOLUME

Computation of expenses charged to plant-owned product

Volume of plant-owned products

Expenses charged (volume X expenses per unit)

Unit cost (total expenses divided by total volume)

Exhibit VIII

Total	Total	Total	Total	Total	Total	Total	Total
Month	Month	Month	Month	Month	Month	Month	Month
January	February	March	April	May	June	July	August
$3,677.51	$3,017.37	$2,286.49	$2,053.71	$1,910.91	$1,879.52	$1,958.78	$1,690.82
839.74	480.10	256.60	263.49	284.21	285.64	280.63	244.50
180.88	126.68	76.50	62.96	90.11	58.67	58.49	76.84
75.43	65.94	63.56	95.87	48.98	97.16	18.18	32.10
231.59	218.39	214.00	261.57	161.54	228.83	209.06	225.02
115.80	109.19	107.00	130.79	53.85	76.28	69.68	75.01
125.47	107.36	82.45	102.19	236.74	124.18	97.46	145.95
71.72	76.23	118.58	39.16	116.94	132.76	38.61	54.26
53.52	53.04	35.14	29.55	39.94	56.10	42.48	30.34
220.98	220.98	220.98	220.98	220.98	220.98	220.98	220.98
149.58	149.58	149.58	149.58	149.58	149.58	149.58	149.58
140.00	140.00	140.00	140.00	140.00	140.00	140.00	140.00
122.71	122.71	122.71	122.71	122.71	122.71	122.71	122.71
147.09	120.69	91.45	82.14	76.44	75.18	78.35	67.64
40.20	37.75	33.05	29.26	59.35	32.81	30.76	31.29
139.20	139.20	139.20	139.20	139.20	139.20	139.20	139.20
54.36	56.82	53.17	45.11	40.01	40.34	41.63	37.44
72.25	67.75	68.96	64.77	49.40	36.79	42.55	32.52
580.24	584.80	519.22	509.45	607.36	509.44	514.18	507.35
298.24	217.90	156.42	150.44	150.82	154.39	170.83	156.16
68.60	80.20	79.60	96.07	78.63	74.18	85.87	74.06
102.60	98.72	84.20	78.60	82.73	76.46	68.16	66.02
22.44	21.30	78.40	67.24	20.00	30.81	9.72	15.18
99.78	100.87	82.77	52.60	49.33	85.32	58.91	60.91
26.28	18.62	38.40	16.32	9.74	7.65	3.83	7.11
3.80	7.40	2.60	8.50	8.60	5.35	2.60	8.03
54.16	48.19	41.99	35.74	43.52	42.47	47.98	42.32
		200.00		16.25	62.50		130.00
59.73	49.29	75.84	110.84	118.43	190.36	69.28	75.82
7,773.90	6,536.07	5,618.86	5,158.84	5,026.30	5,133.66	4,770.48	4,649.16
1,499.99	1,505.99	1,178.31	1,123.43	1,058.94	892.96	889.57	939.02
6,273.91	5,030.08	4,440.55	4,035.41	3,967.36	4,240.70	3,880.91	3,710.14

Expense Report

Total Month September	Total Month October	Total Month November	Total Month December	%	Function	%	Year to date
$1,819.65	$2,191.13	$2,839.29	$3,834.35	45.4	Plant labor	41.7	$29,159.53
446.39	452.82	588.25	904.09	10.7	Processing supplies used	7.6	5,326.46
91.21	201.41	236.60	180.47	2.1	Curing supplies used	2.0	1,440.82
6.11	57.46	27.79	126.25	1.0	Office and selling supplies	1.0	714.83
219.13	187.69	190.49	234.97	2.8	Power and lights	3.7	2,582.28
73.04	93.85	95.24	117.49	1.4	Heat and water	1.6	1,117.22
63.21	115.57	44.05	201.84	2.4	Repairs and maintenance - Building	2.0	1,446.47
53.90	37.88	40.69	48.36	.6	Repairs and maintenance - M & E	1.2	829.09
72.33	69.93	52.13	35.54	.4	Repairs and maintenance - Truck	.8	570.04
220.98	220.98	220.98	220.98	2.6	Depreciation - Building	3.8	2,651.76
149.58	149.58	149.58	149.58	1.8	Depreciation - M & E	2.5	1,794.96
140.00	140.00	140.00	140.00	1.7	Depreciation - Truck	2.4	1,680.00
122.71	122.71	122.71	122.71	1.5	Property taxes	2.1	1,472.52
72.78	87.65	113.57	153.38	1.9	Payroll taxes	1.7	1,166.36
35.15	31.15	34.58	115.27	1.4	Other taxes and licenses	.7	510.62
139.20	139.20	139.20	139.20	1.6	Insurance	2.4	1,670.40
37.38	50.14	40.84	69.43	.8	Workman's compensation	.8	566.67
31.22	64.40	66.12	71.64	.8	Laundry	1.0	668.37
509.45	531.26	531.25	604.59	7.2	Salaries - Officers	9.2	6,408.09
146.52	141.62	156.77	313.68	3.8	Salaries - Office	3.6	2,213.79
72.92	72.68	72.28	67.98	.8	Salaries - Selling	1.5	923.07
63.65	34.36	87.18	108.93	1.3	Advertising and promotion	1.3	951.60
161.19	19.14	51.17	133.12	1.6	Travel and entertainment	.9	629.71
73.75	138.22	116.47	88.44	1.1	Auto and truck expenses	1.4	996.87
16.26	9.08	5.15	28.24	.3	Postage, shipping and mailing	.3	186.67
26.21	15.54	1.35	20.35	.2	Dues and subscriptions	.2	108.33
40.07	42.16	63.90	42.64	.5	Telephone and telegraph	.8	545.14
		50.00			Legal and accounting	.7	458.75
75.50	64.80	65.20	179.51	1.8	Miscellaneous expenses	1.6	1,134.60
4,279.48	5,482.41	6,342.83	8,453.08	100.0	TOTAL EXPENSES	100.0	69,925.02
1,006.97	916.93	910.41	1,139.76		Expenses charged to plant-owned product		13,062.28
3,272.51	4,565.48	5,432.42	7,313.27		NET EXPENSES		56,862.74

VOLUME

Computation of expenses charged to plant-owned product

Volume of plant-owned products

Expenses charged (volume X expenses per unit)

Unit cost (total expenses divided by total volume)

Assuming that the necessary feature of departmentalization of income and expenses is to be retained, there are two other formats available for statement presentation.

One alternative is to show the entire business operation in detail on a columnar sheet. The form would have a column for each income-producing function—that is, sales-meat, sales-frozen food, sales-other, storage, processing, and so on. Each column would show the income from that particular function and the details of the cost of sales and operating expenses associated with that function. Thus, each month a separate statement would be prepared showing the entire business operations on one sheet. This type of statement provides an opportunity to compare the different parts of the business for a month, but eliminates the essential feature of month-to-month comparison.

The second basic format that can be used is to prepare a separate statement for each department or function within the business showing all the information about a department on its statements. This format will allow for month-to-month comparison, but does not allow the manager to get an overall picture of his operation; nor does he get a picture of the relationship between the amounts of income contributed by the different parts of the business.

Forms for the Statements

The statements illustrated in exhibits I through VIII were prepared on preprinted forms. These forms are designed so that each month's statement can be prepared on a separate sheet. These sheets can then be aligned over the preceding month's sheet with only the amount column for the prior month left exposed. There are several accounting forms suppliers who sell this type form along with binders designed to align the material for easy reading.

The specific forms used here are not essential to the system. The essential feature is that the statements be designed to allow for month-to-month comparisons. This can be accomplished by typing comparative statements each month or by a number of other means. A very inexpensive way to provide month-to-month comparisons is to use a columnar worksheet (analysis pad) with space at the center[5] in which account titles can be written. With such worksheets, the account titles are written once a year and the amounts are written in the appropriate columns each month.

How Many Departments?

Each manager must decide the amount of detailed information which will be most useful in managing his business. This decision is very important. Attempting to break down the business into too many departments or operating functions will create unnecessary difficulty in maintaining the records and preparing the statements and will make it more difficult to "draw the line" in allocating the various expenses to the departments. At the same time, to group together essentially different functions will eliminate important information. The decision as to what

[5] Centered so that columns on one side can be used for monthly amounts and on the other for year-to-date amounts.

departments to set up should not be made until after the material in the remainder of this manual has been read.

The purpose of an accounting system is to provide information useful to management in directing the operation of their business—not to provide a straitjacket into which management must fit their operations. The statements presented in exhibits I through VIII show the breakdowns that were considered appropriate for the businesses to which they applied. They are not presented as a model for other operations.

Other businesses will find that some of the items separated in these statements can be combined and still provide adequate information because the areas are not sufficiently important to be separated. On the other hand, it is likely that other functions should be separated to provide the information needed to effectively control operations. For example, if a plant operates a fleet of delivery trucks or is engaged in a manufacturing operation or other important activities, the costs and income applicable to these operations should be separated.

Each important function essentially different in nature should be accounted for separately. If functions and products which have different profit margins or which require different amounts or types of work are combined, the data will not provide an adequate basis for management decisions as to the individual functions.

For example, if the basic service functions had all been combined in the pilot project, very important information as to the differences in income and costs of processing, curing and smoking, slaughtering, and storage would have been lost. However, in the pilot study, it was decided that lard rendering, although somewhat different in nature from the other functions and fairly easily separated, was not sufficiently important in these operations to warrant separation.

A dividing line for determining whether an activity should be separated can be set at approximately 10 percent of overall operations. Thus, any activity that produces 10 percent or more of operating income should probably be treated separately and matched against its cost and expenses if it meets the other criteria for separation. Any activity consisting of less than 10 percent of overall operations should probably be combined with a similar activity. In some cases, smaller activities should be separated for special reasons such as the necessity of obtaining data about an experimental entry into a new line of activity to determine whether to expand into the area or about an activity which appears to be borderline to determine whether it should be eliminated.

In the statements illustrated, the expenses of selling and customer service are not broken down to show the amounts applicable to the various sources of income. In some situations, selling, advertising, delivery, and customer service expenses should be broken down by function. This would be necessary when one or two products or types of sales—for example, home delivery or an extensively advertised product—were causing a major portion of the expense.

In this case it might be appropriate to separate those expenses which are directly applicable to a particular product or function and leave the expenses applicable to all products in the overall expense category. Under some conditions, it might be appropriate to modify the income and

expense summary to show the following for the wholesale meat operation:

Sales-meat	xxx
Cost of sales-meat	xxx
Gross profit	xxx
Less: Truck expenses to deliver	xxx
Contribution to income	xxx

Most selling and customer service expenses are joint expenses which cannot be reasonably allocated to a particular income-producing activity. These should remain in the overall expense category for selling expenses and be deducted on the Income and Expense Summary in the manner illustrated. In most business situations there is no reasonable basis for the allocation of general and administrative expenses. If a reasonable cause and effect relationship cannot be found—as is most often the case with director expenses, office supplies and expenses, and other administrative expenses—the information produced by an allocation can be more misleading than helpful.

In some cases, special studies can be made to provide helpful supplementary information. For example, the cost of processing sales tickets and records of accounts receivable might be determined and related to the different types of sales. This information can be combined with other data regarding those sales in deciding whether an adequate profit is being produced by the different types of sales.

In some cases it will be found that expenses are relatively easy to separate but that income from two functions is so interwoven that separation is difficult. In the pilot study this was found to be the case with processing income and curing and smoking income. The charges for the two functions were sometimes combined; for example, for a hog, the customer would be charged a single fee for the complete job of processing, chilling, rendering lard, and curing. Nevertheless, it was decided that the nature of the work was so different that a separation was needed. In this case a special analysis determined a reasonable basis for splitting the income between the two sources.

Likewise, it was found that income from bulk storage could be easily separated from locker rentals but that the expenses of the two would be difficult to separate. In this case it was decided that separation should not be made since the major portion of the expenses were related to space and an analysis of space occupied would provide the information needed for decision making.

Use of Special Studies

There is danger that an accounting system will become so complex and involved that it will lose its effectiveness. The cost of providing information can exceed the value of the information. In order to avoid this situation, the operator and his accountant must determine whether, in some areas, a special study might be appropriate to provide information about some parts of his operation instead of a continuous breakdown of the operating data. Chapter IV, page 50 shows a set of procedures that can be used to make a special study to determine the cost of performing a specific service. Another example of a special study follows.

If it is decided that the trucks operated by the business are not sufficiently important to warrant setting up a separate department, a special study can be made to determine the cost of operating the truck for a period. The value of this information in determining whether the truck operation is producing an adequate return is apparent. The procedures for making such a study would be:

1. Select a period of at least 1 month which is fairly typical of the operating activity for the truck.

2. During this period, maintain detailed records on the total mileage driven and the amount of gas and oil used.

3. If the truck is run by a full-time driver, determine the total payroll cost—including payroll taxes—for the driver for the month. If the driver works at other functions part-time, maintain a record of the time spent in each function as a basis for allocating his total payroll cost.

4. For repairs, maintenance, tires, and so on, the amount spent—actual or estimated—over the past year or 2 years divided by the number of months will provide a better estimate of the monthly cost than accumulating the actual cost incurred during the month under study.

5. Depreciation, insurance, property taxes and license cost for the past 12 months can be determined from the records. These amounts divided by 12 will show the average monthly cost.

6. Total all the cost determined in 1 through 5. This total can be divided by the number of miles driven during the period to give the average cost of operation per mile.

Similar special studies can be made to determine the cost involved in many parts of the business operation. Studies also can be made to determine the income produced by minor income-producing activities. In any case where a particular operating activity is relatively unimportant or is closely associated with a similar activity, the use of a special study instead of continuous breakdown will probably be appropriate.

The Balance Sheet

In the pilot study it was concluded that the preparation of a complete balance sheet each month was unnecessary. Instead of this, the most significant items from the balance sheet are presented at the bottom of the Income and Expense Summary Sheet (exhibit I). Most of the items on the balance sheet do not change substantially from month to month. Thus, the annual preparation of a balance sheet seems to be adequate for most purposes. There should be, however, a continuous analysis or comparison of such items as current assets—that is cash, accounts receivable, inventory and similar items; and short term debt—that is accounts payable, notes payable, and so on. On the statement the balances of each of these items are shown for each month.

Chapter III
Analysis of Operating Expenses

In order to prepare statements showing income and expenses broken down by function, it is necessary to analyze the income from, and expenses of, operating the business. Categories for this analysis are determined by the decisions made on the amount and type of detailed data needed.

Before getting into the methods of analysis, a word of caution and of encouragement is in order. The operator of the business is the person knowing most about the business and hence must spend some time and effort in making the analyses. An outside accountant, familiar with analytical techniques, can be an invaluable aid in setting up the analyses; and the allocations shown in the illustrations used in this chapter can be helpful as guide lines in making allocations, but each business is unique. The use of someone else's data for allocations will not give proper information about any business.

Encouraging, however, is the fact that the operator does know enough about the business to make reasonable allocations. The initial reaction to this statement will probably be to say, "Impossible!" This is not the case. If each item is taken individually and worked through, the task is relatively simple. Furthermore carefully considered estimates based on the best available information will provide very useful data. Wild guesses, or accepting percentages established for other plants, should be avoided.

The benefits to be derived from making the analyses should not be overlooked. The operator can learn quite a lot about the business by spending the time and effort necessary to make the recommended analyses.

One of the operators in the pilot project stated that he had learned more about his business by being required to think objectively in making the analyses of income and expenses than he had during the entire period his business had operated. The other operators agreed that the critical, objective review of their operations was very valuable.

Two types of analysis of expenses will need to be made for each operating situation. First are the "one-shot" analyses that are completed at the installation of the system and need not be reviewed until there is a fairly substantial change in the operating situation. These will provide the bases for allocation of utilities, repairs and maintenance, depreciation, property taxes, insurance, and similar items. Next are the analyses that are maintained continuously during the operating period. These will provide the bases for allocation of labor, supplies used, and similar items.

The Bases of Allocation

A tabulation of the major types of operating expenses begins on page 29, with an indication of the basis of allocation that should be used. Accounts designated by an asterisk (*) are applicable only to selling expenses, general

and administrative expenses, or both, and no allocation to income-producing functions is usually necessary.

Some of the expense items shown here would probably not be used as account titles by some businesses because of combinations of classification or different operating conditions. On the other hand, many operators will find it desirable to use additional account titles to provide more detailed information about their operations.

Type of Expense	Basis for Allocation
Plant and Processing Labor	Continuous analysis based on type of work done (or estimates checked periodically by actual analysis).
Payroll Taxes	Labor distribution or predetermined percentage based on estimate of past labor costs.
Supplies Used	Continuous analysis based on type of supplies.
Lights and Power	Predetermined percentage based on estimate of horsepower demand of equipment in place for each function.
Heat	Predetermined percentage based on analysis of heated space.
Water	Predetermined percentage based on estimate of usage.
Repairs and Maintenance - Building	Predetermined percentage based on floor space analysis.
Repairs and Maintenance - Machinery & Equipment	Predetermined percentage based on value distribution of equipment in use in the plant.
Laundry	Predetermined percentage based on use of items laundered.
Depreciation - Building	Predetermined percentage based on floor space. Note: If the building account includes lockers, refrigeration equipment, insulation, and so on (as was found in some cases in the pilot study), a separation of these amounts is needed so that the basic building can be prorated on the basis of space and the other items combined with equipment.

Type of Expense	Basis for Allocation
Depreciation - Machinery & Equipment	Predetermined percentage based on value distribution of equipment in use in the plant.
Property Taxes	Predetermined amount based on valuation of property. For real property tax—floor space; for personal property—use.
Insurance	Predetermined amount based on item insured. For real property—floor space; for personal property—use; for inventory—selling expense; for employees—same as payroll taxes.
Maintenance Supplies	Predetermined percentage based on floor space.
Salaries and Wages - Selling*	Selling expenses.
Advertising and Promotion*	Selling expenses.
Travel and Entertainment*	Selling or general and administrative depending on reason for expenditure.
Auto and Truck Expense	Predetermined percentage based on use of equipment.
Repairs and Maintenance - Autos & Trucks	Predetermined percentage based on use of equipment.
Office Supplies*	General and Administrative expenses.
Selling Supplies*	Selling expenses.
Salaries - Officers	If the officer actually engages in production work for a substantial amount of his time, his salary should be prorated on the basis of a continuous time analysis. If his time is spent in overall management, his salary should be charged to general and administrative expense.
Salaries - Office	Divide between selling and general and administrative on the basis of an analysis (or estimate) of time spent in each.
Postage, Shipping & Mailing*	General and Administrative expense. Note: If a substantial amount of postage is used to mail out advertising literature or to ship products sold to customers, this should be separated and charged to selling expenses.

Type of Expense	Basis for Allocation
Dues and Subscriptions*	General and Administrative.
Telephone and Telegraph*	General and Administrative. Note: If a substantial amount of selling effort is conducted by telephone, this should be charged as a selling expense.
Other Taxes and Licenses*	General and Administrative or Selling, determined by type of tax.
Legal and Accounting*	General and Administrative.
Directors Fees*	General and Administrative.
Miscellaneous Expenses*	General and Administrative or other depending on reason for expense. Note: Individual accounts should be set up to include all expense items of significance so that the miscellaneous expenses account is kept at a minimum.

In most of the locker industry, labor and supplies frequently account for from 50 to 75 percent of total operating expenses. Under the proposed methods of allocation, these are prorated on the basis of continuous analysis of actual operations.

Many of the other expenses can be attributed to a specific operating department or to the selling or general and administrative expenses. For these other expenses a reasonable basis of allocation has been selected, based on the importance of the item and the relative ease of determining the allocation. Thus, it is reasonable to assume that estimates of these allocations, based on the reasoned judgment of the manager, will provide reliable data for management decision making.

"One-Shot" Analyses

The tabulation of methods of allocation of expenses indicates that certain basic analyses need to be made initially since other allocations are dependent on them. These include analysis of space utilization, demand on refrigeration equipment, and value of equipment in use. These and the other analyses included in this section are made when the system is installed and are not recomputed or changed unless there is a significant change in the operating situation.

Floor Space

The basis for analysis of floor space is a sketch of the floor plan of the building indicating dimensions of each part of the building and normal use of the space. From this sketch a worksheet is prepared

FLOOR PLAN OF A PLANT

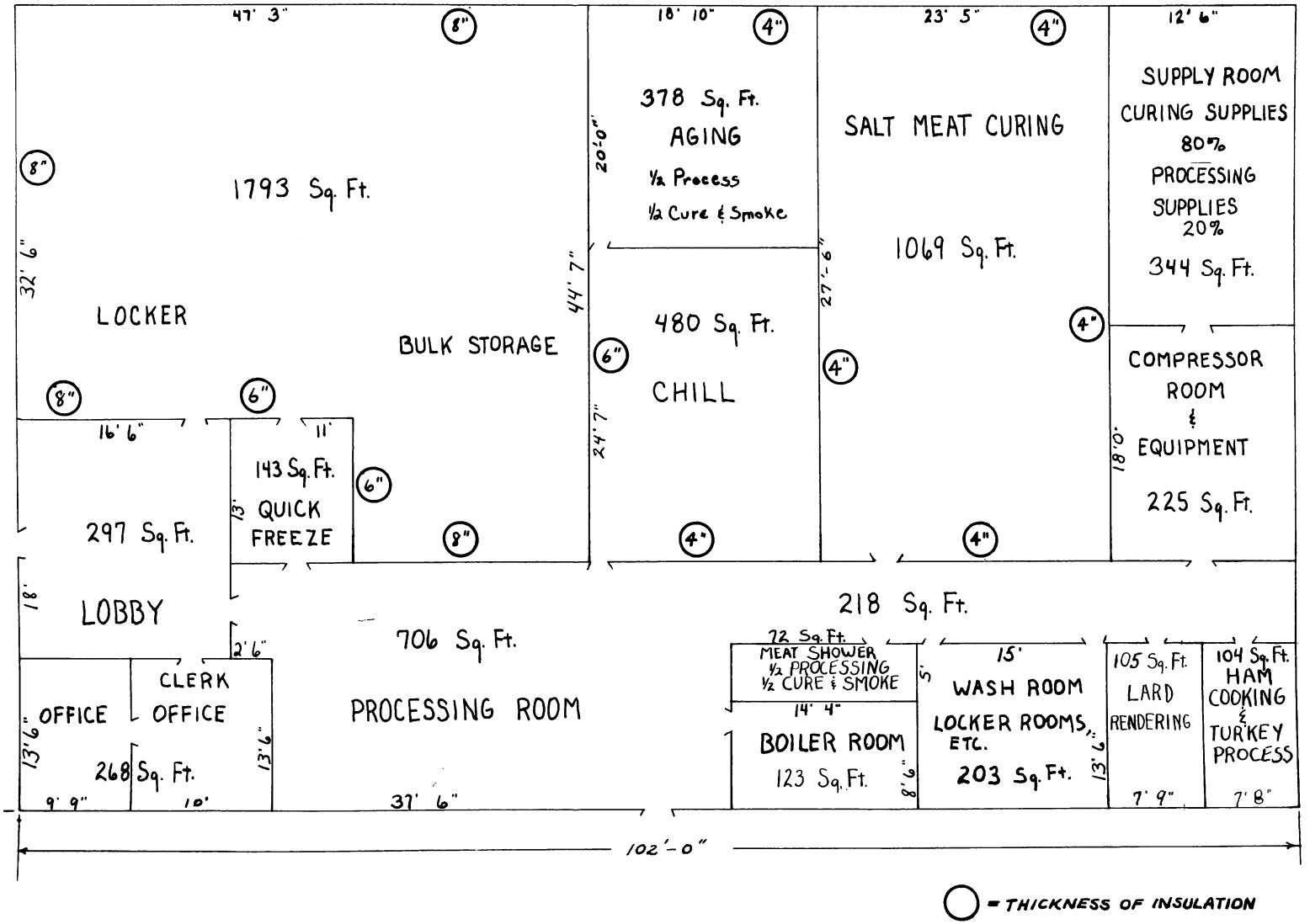

Exhibit IX

Exhibit X

Analysis of Floor Space

Area (Sq. ft.)	Total	Storage	Processing	Curing and smoking	Selling	Administrative
Locker and bulk storage	1,793	1,793				
Quick freeze	143		143			
Aging room	378		189	189		
Chill room	480		480			
Salt meat room	1,069			1,069		
Supply room	344		69	275		
Ham cooking, etc.	104		104			
Lard rendering	105		105			
Meat showers	72		36	36		
Processing room	706		706			
Office	268					268
Lobby	297				297	
Total allocated	5,759	1,793	1,832	1,569	297	268
Percentage	100%	31%	32%	27%	5%	5%
Heated space (Sq. ft.)						
Supply room	344		69	275		
Ham cooking, etc.	104		104			
Lard rendering	105		105			
Meat showers	72		36	36		
Processing room	706		706			
Office	268					268
Lobby	297				297	
Total heated space	1,896	-o-	1,020	311	297	268
Percentage	100%	-o-	54%	16%	16%	14%

to determine amount and percentage of floor space devoted to each function. A typical sketch of a plant with the accompanying worksheet is presented in exhibits IX and X.

The reasoning that produced some of the specific allocations illustrated in exhibit X might be helpful in making other similar allocations even where the situation is substantially different. First, the actual current use, or more accurately, a realistic appraisal of the anticipated use for the next operating period, is the basis for the allocation. This is the best measure of the effort now being devoted to the various operating functions. The fact that the effort could be redirected to more efficient use would definitely be considered in making management decisions regarding reallocation of effort, but would not enter into an allocation of expenses incurred unless the change in use is actually made.

Multipurpose space such as hallways, employee washroom-locker room, engine, compressor, boiler rooms, and common storage rooms can be omitted from the computation, with the allocation percentage based on the total allocable space. This produces the same results as distributing the multipurpose space to the various functions on the basis of their proportion of total space.

Quick-freezing of packaged meats is considered to be a part of the processing function; thus, the freezer is allocated to processing. The meat washroom is used to wash down whole animals and has basins provided for washing salt-meat; hence, the space is divided between the two functions. The "supply room" is used exclusively for storing processing and curing supplies (other supplies are stored in the compressor room and washroom). The 20-80 percent split is based on an estimate of the normal space requirements for the two types of supplies.

The worksheet is completed by adding each of the columns and computing a percentage for each function. The percentages are computed by dividing the total of all allocated space into the total allocated to each function. The use of the data produced on this worksheet is indicated in the discussion of the specific item allocations.

Demand on Refrigeration Equipment

Refrigeration expense—including power, repairs and maintenance, and depreciation of refrigeration equipment—is a significant part of the cost of operating a locker plant. A reasonable allocation of refrigeration cost to the various functions served requires a determination of the proportionate demand on the equipment. This determination is relatively simple to make for the plant which is set up with separate refrigeration units for separate functions. Many plants are designed with separate units for zero storage, quick-freeze, and high-temperature storage. If this is the case, a reasonable allocation of refrigeration cost can be made on the basis of the horsepower rating of the equipment engineered to handle the load for each function.

For the plant with equipment serving two or more functions or equipment interlocked to serve all functions, the operator will need to estimate the horsepower of equipment that would be needed if each area were separately handled. This estimate should be based on the operator's knowledge of his operations and the operation of other plants in his area.

Exhibit XI

Analysis of Demand on Refrigeration Equipment

Units	Total horsepower	Allocated To: Storage	Processing	Curing and smoking
Unit for zero storage	15	15		
Unit for quick-freeze	10		10	
Unit for high-temperature storage	5		2.5	2.5
Total horsepower	30	15	12.5	2.5
Percent	100	50	42	8

As an example of the computational method, assume that the plant would use a 15-horsepower unit for zero storage, a 10-horsepower unit on the quick-freeze, and a 5-horsepower unit for all high-temperature storage. Assume further that separate departments are to be set up for storage, processing, and curing and smoking. Finally, assume that the demand on high-temperature storage is divided equally between processing and curing and smoking. In this situation the allocation would be as illustrated in exhibit XI.

This allocation should be made as carefully and accurately as possible since it is used in making other allocations. The percent line is used to allocate the value of all refrigeration equipment in the value distribution of equipment in use. The total horsepower line becomes a part of the analysis of horsepower demand of equipment in use.

Value Distribution of Equipment

The worksheet in exhibit XII shows the method of computing percentage distribution of the value of equipment in use. The percentages established by this analysis are used for the distribution of Repairs and maintenance-machinery and equipment, Depreciation-machinery and equipment, Property tax on machinery and equipment, and Insurance on machinery and equipment.

The valuation used on the equipment list should be original cost. The detailed listing of items of equipment used on the worksheet can usually be obtained from the depreciation schedules used for Federal Income Tax purposes. If not available, a survey of the plant will provide a listing of the major items of equipment. The items can be priced from a knowledge of original cost or current price lists. The percentages so produced will be sufficiently accurate to avoid any significant distortion of reported results.[6]

Horsepower Demand of Equipment

The worksheet presented in exhibit XIII shows an example of the analysis of

[6] To use a percentage distribution on a specific repair cost--for example, on equipment which is solely used for the processing function--may appear unnatural, but this method is easiest to use and produces a more realistic picture of overall results. This is true since this method eliminates a large part of the month-to-month distortion of functional Expense Reports that would appear under the use of specific allocation.

Exhibit XII

Analysis of Value Distribution of Equipment

Item of equipment	Total cost	Allocate to: Storage	Processing	Curing & smoking	Selling	Admin.	To be reallocated on basis of: Refrig. demand	Floor space
Compressor w/motors	$4 626 90						$4 626 90	
2 pumps	342 50						342 50	
1 cooling tower	960 00						960 00	
Coils, plates & plumbing	11 461 23						11 461 23	
Freezer lockers	5 872 99	$5 872 99						
Processing tables, etc.	499 50		$499 50					
Food choppers	1 097 50		1 097 50					
Bacon slicer	1 194 50		1 194 50					
Steak maker	309 30		309 30					
Beef splitter	725 00		725 00					
Smoke tender	610 60			$610 60				
Display cabinet	597 40				$597 40			
Boiler	840 00							$840 00
Maintenance equipment	260 50							260 50
Adding machine	320 00					$320 00		
Desk and chairs	160 00					160 00		
Total	74 770 50	6 925 36	16 340 64	10 670 70	4 980 60	2 420 00	19 762 60	13 670 60
Reallocate - refrigeration equipment - %		50%	42%	8%				
Amt.		9 881 30	8 300 29	1 581 01			(19 762 60)	
Reallocation - floor space items - %		31%	32%	27%	5%	5%		
Amt.		4 237 89	4 374 59	3 691 06	683 53	683 53		(13 670 60)
Allocated totals	74 770 50	21 044 55	29 015 52	15 942 77	5 664 13	3 103 53	-0-	-0-
Percent		28%	39%	21%	8%	4%		

Exhibit XIII

Analysis of Horsepower Demand of Equipment in Use

Equipment	Total horsepower	Allocated to: Storage	Processing	Curing and smoking	Selling	Administrative	To be allocated on basis of floor space
Refrigeration units (per analysis exhibit XI	30	15	12 1/2	2 1/2			
Fans in zero room	4	4					
Fans in quick freeze	1		1				
Fans in chill room	4		4				
Display cabinets	3 1/2				3 1/2		
Meat grinder	1 1/2		1 1/2				
Bacon slicer	1		1				
Splitting saw	1 1/2		1 1/2				
Electric hoist	2		2				
Heating fans	2						2
Furnace motor	1/2						1/2
Exhaust fans	2						2
Air conditioners					2		
Totals	76 1/2	26	20 1/2	12 1/2	9 1/2	1/2	7 1/2
Reallocation of common equipment on basis of floor space:							
Percentage		31	32	27	5	5	
Amount (to nearest 1/2 hp.)		2	2 1/2	2	1/2	1/2	(7 1/2)
Total	76 1/2	28	23	14 1/2	10	1	-0-
Percentage	100.0	37	30	19	13	1	

horsepower demand. The listing of electric motors on equipment in use is obtained from a survey of the plant. Any multipurpose equipment is noted and allocated according to the use of that equipment. Refrigeration equipment is allocated to the functions served on the basis of the horsepower for each function as established in exhibit XI.

The percentage allocation for horsepower demand of equipment in use becomes the basis for allocation of Light and Power expense. This treatment omits the lights in use from consideration, but this is reasonable in most situations since the power used for normal lighting is small compared to the other power demands. This treatment also omits from consideration the fact that some of the equipment such as refrigeration, freeze chest, blower fans, and so on, are on 24-hour service, while other equipment is used only part time. The minor error introduced by this treatment does not warrant the additional effort necessary to develop a correction factor.

Payroll-Related Cost

As indicated in the tabulation of types of expenses, payroll taxes and other payroll-related costs can be allocated to the various functions each month in direct proportion to the actual distribution of labor cost for the month. Distribution of labor cost is discussed on pages 41-50. Direct allocation provides an accurate allocation of these costs but is somewhat difficult to handle since it requires the following steps each month:

1. Summarize the month's payroll cost showing the amount allocated to each function.

2. Compute percentages for each function by dividing the payroll cost allocated to the function by the total payroll cost.

3. Apply the percentages computed to the payroll tax and other payroll-related cost to determine the amount of such cost to be allocated to each function.

A less accurate, but acceptable, method of allocating payroll-related cost can be used with less difficulty. Under this alternate method, a percentage allocation is established at the installment of the system and used to allocate all payroll-related cost as incurred or recorded. The worksheet presented in exhibit XIV shows the method of computing the percentage allocation. On this worksheet, allocation of the salary of each employee should be based on a reasoned estimate of the time the employee spends working at each of the functions.

The percentages established by this analysis should be corrected—that is, recomputed—when information on the actual payroll distribution for 3 or more months is available and should be corrected at least annually thereafter. This method is not acceptable for allocating payroll cost, since total payroll cost is such a large part of total operating expenses.

Fixed-Charge Items

Most businesses that prepare monthly operating statements predetermine the monthly amount to be charged off as insurance, depreciation, taxes, and similar items, using these predetermined amounts in the statements prepared. At the end of their fiscal year, or earlier if the situation changes significantly, the total for the year is corrected and a new monthly charge is determined for the following period. The worksheet presented in exhibit XV shows the method of computing the monthly charge for insurance, allocated by function.

Exhibit XIV

Analysis of Payroll for Distribution of Payroll - Related Cost*

Employee	Total wages	Allocated to			
		Processing	Curing and smoking	Selling	Administration
John Johnathon (Meat cutter)	$5,000	$5,000			
Jim Jamison (Assistant meat cutter, lard renderer and curer)	4,800	2,400	$2,400		
Ethel Alfonso (Wrapper)	2,800	2,800			
Sue Sympson (Bookkeeper)	3,200				$3,200
Joan Jordan (Clerk)	3,000			$2,000	1,000
Jack Marcus (Manager)	8,000			2,000	6,000
Total payroll	$43,200	$21,000	$6,200	$5,800	$10,200
Percentages	100%	49%	14%	13%	24%

*This estimate is not adequate for analysis of payroll cost but is acceptable for use in distributing payroll taxes and other payroll related costs.

Exhibit XV

Analysis of Insurance Expense by Function

Insurance coverage	Annual premium	Storage	Processing	Charge to Curing and smoking	Selling	Administrative
Building - Fire and extended coverage (floor space percentage)		31%	32%	27%	5%	5%
	$172.00	$53.32	$55.04	$46.44	$8.60	$8.60
Machinery and equipment - Fire and extended coverage (equipment value percentage)		28%	39%	21%	8%	4%
	$226.60	$63.45	$88.37	$47.59	$18.13	$9.06
Inventory - Fire and theft	$81.60				$81.60	
Workmen's compensation Deposit - (payroll distribution percentage)			49%	14%	13%	24%
	$336.60		$164.94	$47.12	$43.76	$80.78
Patron's product insurance	124.47				124.47	
Business interruption	65.44					65.44
Total annual cost	1670.40	375.00	635.76	165.36	309.12	185.16
Monthly amount	139.20	31.25	52.98	13.78	25.76	15.43

The following comments are presented to indicate some of the reasoning used in preparing this analysis. Life insurance on key persons is not included in the business insurance expense but is treated separately, and the net cost is charged as Other Outgo along with interest expense and similar items. Insurance on building (fire, extended coverage, and so on) is prorated on the basis of space. Insurance on machinery (fire, extended coverage, boiler explosion, and so on) is prorated on the basis of value distribution of equipment. Insurance on inventory of merchandise for resale is charged to Selling Expenses. If inventory of supplies is large enough to constitute a substantial part of the cost of insurance on inventory, a proration should be made based on relative values.

Workman's compensation insurance is prorated on the basis of the estimated percentage distribution of payroll (exhibit XIV). Insurance for the purpose of protecting against damage to patrons' food in lockers due to equipment or power failure is charged to Storage Expenses. Business interruption insurance is charged to General and Administrative Expenses. Insurance for the purpose of protecting the business against claims from customers injured on the premises is charged to Selling Expenses. Auto and truck insurance is prorated according to the use of the equipment.

Similar worksheets should be prepared for computing such monthly charge as taxes. For depreciation, the monthly charge is based on the annual amount of depreciation and the percentage allocations computed in exhibit X for building depreciation and in exhibit XII for depreciation of machinery and equipment.

Summary Worksheet

When the basic initial analyses have been completed, a worksheet or "permanent" record similar to exhibit XVI should be prepared. This summary will be useful as a reference for the person keeping the books and preparing the monthly statements. Some of the items listed on the summary have not been discussed. However, the ideas set forth in the preceding pages and the operator's intimate knowledge of operating conditions of the business will provide an ample basis for setting up the percentages.

Continuous Analyses

As indicated previously, labor and supplies used constitute from 50 to 75 percent of total operating expenses in the locker and local processing industries. The validity of the operating statements depends on the accurate allocation of these costs to the functions served. Adequate time and effort should be devoted to these items to assure a reasonably accurate allocation, since the effort expended in making accounting allocations should be proportionate to the importance of the item. Since the operating situation in most locker plants changes from season to season, an accurate allocation of labor and supplies expenses requires continuous analysis.

Labor Control and Planning

The analysis of labor cost has two basic uses in an operating situation. First, the records can be established in such a way as to assist in controlling

Exhibit XVI

Summary of Fixed Percentages and Monthly Amounts

Account	Total amount or percentage	Allocation				
		Storage	Processing	Curing and smoking	Selling	Administrative
Light and power	100%	37%	30%	19%	13%	1%
Heat	100	-0-	54	16	16	14
Maintenance supplies	100	31	32	27	5	5
Repairs and maintenance						
Building	100	31	32	27	5	5
Machinery and equipment	100	28	39	21	8	4
Auto and truck expense	100	-0-	50	10	20	20
Laundry	100	10	70	10	10	
Depreciation						
Building	$220.98	$109.59	$37.12	$33.05	$27.88	$13.34
Machinery and equipment	149.58	60.32	51.01	24.64	5.69	7.92
Property taxes	122.71	39.91	49.82	22.19	5.85	4.94
Insurance	189.20	31.25	52.98	13.78	25.76	15.43

labor cost and planning and controlling labor usage. If this is not desired, the records can be set up to provide the data needed for the accounting distribution only.

In most situations, the value of using these data for planning and controlling labor cost and use will far exceed cost of the added effort. Effective planning and control can cut down on amount of overtime required and amount of extra help needed during the rush season. This reduction in cost adds directly to the net profit of the business. In many businesses a 5 percent reduction in labor cost will cause a 50 percent, or greater, increase in net income.

It is common knowledge that employees tend to stretch assigned tasks to fill the time available for their completion. It is also common knowledge that an employee who is assigned more work than can reasonably be completed in the assigned time is likely to become discouraged and do less than he is capable of. A discussion of employee relations, incentives, and so on is beyond the scope of this manual; however, the manager who has not acquired a thorough knowledge of the production capacity of his work force cannot possibly direct their efforts effectively.

One way of acquiring knowledge of the production capacity of an employee is through time and motion studies by experts. These studies are designed to determine the best way to perform a specific task and to determine the amount of time the task should take with the employee working at a normal pace. The data obtained provides a standard for comparison with the output of the employee. In situations where employees work continuously on routine, repetitive tasks, shielded from outside interference, these studies have provided excellent guides for measuring employee efficiency.

Most locker plants do not operate under conditions which would justify the expenditure of funds for scientific time and motion studies. This does not mean that no thought should be given to the problem. Each operator should examine his operation in detail, paying particular attention to the routing of products through the plant, bottlenecks in the operation, and so on. Oftentimes minor changes in the location of a particular operating unit will effect substantial improvement in the overall operation. Employees will often suggest improvements of substantial value, if such suggestions are honestly solicited and given real consideration.

Each operator should also spend the necessary effort to train employees in efficient performance of their assigned task. Time spent in working with employees, experimenting with different methods of performing certain tasks, and experimenting with different combinations of the work force can pay handsome dividends in more efficient operation during rush periods.

A detailed continuous analysis of employee time used with an analysis of daily volume statistics can be a very effective aid in controlling the use of employee time. These analyses, built up over a period of time, will give a knowledge of employee operating capacity under operating conditions in your plant. This knowledge and that of the volume of work to be done are invaluable in setting up work schedules for employees, determining when overtime work should start and determining when additional labor should be hired.

Exhibit XVII shows a form that can be used for continuous analysis of employee

Exhibit XVII

Weekly Payroll Record

Name of employee_____ For week ending_____ 19___

Day of week		Time in	Time out	Total hours worked	Time in Each Department					
					Processing	Curing & smoking	Slaughter	Selling cust'r service	Admin. & office	General
SUN.	a.m.									
	p.m.									
MON.	a.m.									
	p.m.									
TUES.	a.m.									
	p.m.									
WED.	a.m.									
	p.m.									
THURS.	a.m.									
	p.m.									
FRI.	a.m.									
	p.m.									
SAT.	a.m.									
	p.m.									
Totals										

Instructions: Must be completed each day. Estimate time in each department to nearest 1/2 hour. Total of all departmental hours must equal total hours worked each day.

time. This form should be modified to meet the particular needs of the operating situation for which it is to be used. A more detailed breakdown as to the different services performed by the employees would be useful under some conditions; for example, some operators will want to break down processing as to the type of meat processed, the actual service performed (that is checking in, cutting, wrapping, and so on), or both.

To be useful, this data must be reasonably accurate. An employee should be assigned to assure that a form for each employee is filled out as the work progresses and not estimated at the end of the week for the entire week. To assure uniformity, all employees must be instructed as to what to include in each category. For example, they should be instructed to include start-up and clean-up time with the actual operating time on a particular function and to account separately for the time during which there was no production because of lack of product, machine breakdown, or similar cause. This nonproductive time should be handled according to one of the methods described on pages 49-50.

Exhibit XXV shows a form that can be used to accumulate volume statistics for use in conjunction with the labor time analyses. To be effective for labor scheduling and control, the data must represent the work actually performed each day rather than the product that came into the plant or the product delivered to the customers that day. This information should be accumulated daily from the processing tickets and other records showing volume of product worked on that day. Comparing these data with the daily summary of the production employees' time over a period of normally busy operation will provide a good indication of the normal work capacity of the labor force. Any significant variation in the time-volume relationship indicates that the cause should be determined and, possibly, corrective action taken.

As indicated previously, knowledge of the productive capacity of the work force and of the production work to be done for the day or week provides an excellent basis for planning work and scheduling each employee's time. The manager, who is (or should be) away from close contact with production work in his plant, will find this type of record of utmost value in controlling this phase of his overall operation. A comparison of scheduled time and output with the attained time and output provides an intimate knowledge of performance of the work force.

After the initial backlog of time analysis data has been built up, the continuous analysis of employee time can be reduced to a periodic check on actual time—that is, 1 complete week per month or 2 days per week. In this case the primary check on employee performance will be scheduled output compared to actual output.

Accounting Distribution Only

If the labor analysis is not to be used to aid in labor control and production planning, the amount of work involved can be reduced. In this case the weekly payroll record shown in exhibit XVII can be simplified by omitting the "time in - time out" record and showing only the total hours and distribution. This simplified form, then, need only be prepared for employees who work at more than one function. For example, if the functional breakdown to be used is Processing, Slaughter, Storage, Selling, and Administrative, there is no need for a

Exhibit XVIII

Monthly Payroll Summary

Name of employee_____ For month of_____19____

Week No.	Total hours worked	Time In Each Department					
		Processing	Cure & Smoke	Slaughter	Selling cust'r service	Admin. & office	General
1							
2							
3							
4							
5							
Total hours							
Distribution of pay	Total Pay						

Instructions:
1. For employees on a weekly or bi-weekly pay basis include in total pay an amount for all hours worked to the end of month even though not paid.
2. Compute distribution of pay prorated on the basis of hours worked. For example, if employee total hours are 170 and hours in Processing are 85, then 85/170 multiplied times total pay is amount distributed to Processing.

"weekly payroll record" for an employee who works in the processing operation exclusively.

However, under this breakdown, if an employee works part-time in the slaughter function and part-time in the processing function, an analysis form is needed to accumulate the time used in each. Furthermore, if the curing and smoking operation is sufficiently important to be separated from processing, a time analysis would be needed for an employee who worked part-time in cutting meat and part-time in washing and resalting meat in the cure room. The same is true for a processing employee who spends a significant amount of time in selling. No allocation of time should be attempted for an employee who spends only a nominal amount of time in a second function.

For each employee whose time is divided between functions, a monthly summary form, illustrated in exhibit XVIII should be used. How to prepare this summary follows:

1. Enter the employee's total time with appropriate breakdown by function each week in the appropriate spaces on the summary and compute the month's total.

2. Enter the employee's total pay for the month on the summary.

3. Compute the distribution of total pay prorated on the basis of hours worked. For example, if the employee's total time for the month is 170 and the time spent in processing is 70, then 70/170 multiplied by total pay is the amount distributed to processing. As an alternative computational method, divide total pay for the month by the total number of hours to be allocated this month to get an hourly rate. Multiply this rate by the number of hours in each department to get the total amount distributed to the department.

4. Cross-add the distribution of pay to assure that the total of the distribution is equal to total pay.

The final step in the accumulation of payroll cost for accounting distribution purposes is the preparation of the Summary of Payroll - Plant Employees illustrated in exhibit XIX. This form provides the basis for the breakdown in the ledger of the Plant and Processing Labor Expense account.

To prepare this summary:

1. List on this sheet the name and total month's pay for each plant employee. Note that office employees, sales employees, and officers should not be listed on this summary if their salaries are entered in separate expense accounts in the ledger. The columns provided for selling, office, and so on, are used if a plant employee spends time that should be charged to these functions.

2. For those employees whose time has been distributed between functions, enter the distribution from the Employees Monthly Payroll Summary.

3. For employees who have worked in only one department during the month, enter their total pay under the appropriate departmental column.

4. Add each column and cross-add the column totals.

Two problems in payroll distribution for accounting purposes require some attention. First is the question of how to distribute the nonproductive time of the employees. The other is the question of how to handle the payments to weekly paid personnel at the end of the month.

Summary of Payroll - Plant and Processing Employees

For Month of_____19____

Employee name or number		Total	Each Department					
			Processing	Cure & Smoke	Slaughter	Selling cust'r service	Admin. & office	General
1	Hrs.							
	$							
2	Hrs.							
	$							
3	Hrs.							
	$							
4	Hrs.							
	$							
5	Hrs.							
	$							
6	Hrs.							
	$							
7	Hrs.							
	$							
8	Hrs.							
	$							
9	Hrs.							
	$							
10	Hrs.							
	$							
Total	Hrs							
	$							

Exhibit XIX

Many locker plants have periods during the year when there is not adequate work to occupy the time of even a skeleton work force. Even during the busier times there are days when there is not enough work to keep the work force busy, or the work is stopped because of a machine breakdown. What is to be done with the amount paid an employee when he is not engaged in productive work?

One procedure is to allocate all nonproductive time to the employee's primary function. For example, if an employee who was hired as a meat cutter spends 120 hours cutting meat, 30 hours on the road selling, and 20 hours nonproductive time, his time would be allocated as follows: 140 hours—120 plus 20—to Processing and 30 hours to Selling Expenses.

This method assumes that the function for which the employee was hired should be relieved of the cost of any time that can be used productively by another function, but that the primary function should be charged with all of the nonproductive time. This procedure is entirely logical in reference to the decisions management needs to make in operating the business. It, in effect, says, "If the processing function is not producing enough profit and more volume is not attainable, you can reduce processing cost, and hence increase profit, by finding an alternate productive use for the processing employees during slack season." This procedure is easiest to handle.

If the labor analysis is to be used for purposes of accounting distribution and nonproductive time is to be charged to the primary function, there is no need for a "General" column on the Weekly Payroll Record. For each employee, the time spent in productive work outside the major function would be allocated to that function with the remainder of the time—productive or nonproductive—being charged to the major function.

Another procedure is to allocate nonproductive time to productive time pro rata. Using the same example as already cited, if an employee who was hired as a meat cutter spent 120 hours cutting meat, 30 hours on the road selling, and 20 hours nonproductive time, his nonproductive time under this procedure would be allocated as follows: 16 hours to Processing and 4 hours to Selling expenses. The computation for allocating nonproductive time is as follows:

> Total productive time is 150 hours; processing time is 120; therefore, 120/150 times the nonproductive hours is allocated to processing and 30/150 times the nonproductive hours is allocated to selling.

This would give a distribution of total time as follows:

120 + 16 = 136 hours for processing
30 + 4 = 34 hours for selling

The same distribution of total pay can be obtained by eliminating nonproductive time from consideration. In the above illustration, 120/150 times total pay will give the same amount as 136/170 times total pay. The actual allocation of nonproductive time will be needed only when the functional amount is to be determined by multiplying hours in a department by an hourly rate.

This procedure recognizes that an employee may be hired to perform many functions and prorates the cost proportionately to all functions served. It would be the most logical method for an employee who was specifically hired to do more than one major job. In a particular operation some employees' nonproductive time could be allocated according to the first alternative

described and others according to the second, although selecting a method and using it for all employees would be simpler.

In many plants the nonoperating time is not all nonproductive. Plant employees are often used to paint the building and do other general maintenance work during slack times. Logically, the cost of time used this way should be charged to Repairs and Maintenance and reduce Plant Labor cost. This can be accomplished by recording a journal entry—Debit, Repairs and Maintenance; Credit, Plant and Processing Labor for the dollar value of the time spent. Entries in the accounts which remove a part of payroll cost from the identifiable payroll accounts create some problem in reconciling the payroll and withholding tax reports to the books and thus should be avoided unless the amount is significant.

Handling labor cost for employees paid on a weekly basis presents a minor problem in preparing monthly statements. The proper amount of labor cost to show on a monthly statement is the amount earned by the employee that month. The payroll for employees paid on a monthly basis is usually recorded before the end of the month and, therefore, the accounts show the appropriate amounts for the preparation of statements.

For employees paid on an hourly or weekly basis, there will usually be, at month-end, a part of a week for which the employee has not been paid. If this is a significant amount, it should be included in the expenses for the month. For labor distribution analysis, this means that the time and total pay distribution would include the time and pay for a part week at the beginning and the end of the month. Recording the amount on the books of account is discussed on page 63.

Operating Supplies

At the time supplies are purchased, an analysis should be made to indicate the function or department in which the supplies are to be used. The amount of detail needed will be determined by the number of different departmental or functional classifications set up.

For example, if the Processing department encompasses all the activities of slaughtering, processing, curing and smoking, lard rendering, and so on, then all the supplies used in any of these activities would be allocated to the processing function. If, however, curing and smoking is set up as a separate function, curing and seasoning material, paper and bags for hanging meats, and other curing supplies would be allocated to the Curing and Smoking function.

No special analysis form is needed to break down supplies. The invoice usually provides the information needed. The ledger accounts can be set up to accumulate the information. These are discussed in Chapter IV.

Chapter IV
Preparation of Functional Expense Reports

This manual has been prepared on the assumption that the person who will maintain the records will have a basic understanding of bookkeeping techniques. Details normally found in an elementary accounting textbook are omitted. Emphasis throughout the manual is on methods and procedures necessary to accumulate,

analyze, and present information which is somewhat different from that usually found in the reports for small business. The discussions are restricted mainly to the peculiar features of methods and procedures described.

Natural Versus Functional Classification

Before discussing preparation of functional expense reports, the distinction between a "line item" or natural breakdown of expenses and a functional or departmental breakdown needs to be clarified. A function can be thought of as a department within the business. Thus, in the statements illustrated in the preceding chapters, the business was considered to have a separate department for Storage, Processing, Curing and Smoking, Slaughtering, Selling, and Administrative. The "line item" or natural classification of accounts represents the basic nature of the expense—for example, Salaries and Wages, Insurance, and Depreciation.

The purposes of this system would be adequately served by accumulating one total for each natural classification, if the information is maintained so that these expenses can be properly allocated between the functions or departments. For example, one account in the ledger could be maintained for salaries and wages with all amounts paid to the entire group of employees, including office help, salesmen, and officers accumulated in that account. The analysis of payroll discussed in chapter III would serve as a basis for breaking this amount down between departments.

Oftentimes, to increase the amount of information available in the accounts, it is desirable to include something of a departmental breakdown within the natural classifications. For example, it might be desirable to have separate accumulations of—and separate accounts for—plant labor, office employees, selling employees, and officers. In the case of supplies, one accumulation of total supply cost would be adequate, if records are maintained to provide information as to the department to which the supplies should be allocated. Nonetheless, it might still be desirable to maintain separate accounts to show the different types of processing supplies as well as maintenance supplies, selling supplies, and office supplies separately in order to reduce the problem associated with recording functional allocations. (For a further discussion of this point see the section on Informing the Recordkeeper, pages 55-56.)

Most accountants will include in the books some accounts that represent a semifunctional classification. For example, if a chart of accounts includes ledger accounts for Supplies Used, Repairs and Maintenance, Truck Expenses, and Taxes and Licenses, the following would probably be found: Maintenance supplies, except for truck maintenance, would be included in Repairs and Maintenance rather than in Supplies Used; gas and oil for the truck, repairs on the truck, maintenance supplies for the truck, and license for the truck would be included in Truck Expenses rather than in Gas and Oil, Repairs and Maintenance, Supplies Used, and Taxes and Licenses, respectively.

This crossing of classification lines can be avoided by either of two procedures. One is to expand the number of accounts

so that the account titles will show both a natural and a semifunctional classification. In the case just cited, the problem would be solved by expanding the chart of accounts to include accounts for: Depreciation - Truck, Repairs and Maintenance - Truck, Gas and Oil - Truck, Truck License, and so on. These expenses would then be allocated to the various functions established—that is, Processing, Selling, and so on—on the basis of a determination of what the truck is used for.

The second possibility is to set up a separate department for the truck so that the expenses could remain in the natural classification accounts with the functional allocation showing the amounts applicable to the truck.

Crossing classification lines does no harm as long as the accounts are consistently maintained—that is, the same type items are included in the same accounts from period to period—and so long as the user of the statements has a reasonable knowledge of what is included in the accounts. The decision as to what accounts to use is a matter of personal preference. The ultimate criterion must be the usefulness of the information provided.

Ledger Accounts

One of two basic methods can be used to accumulate information on a functional or departmental basis. One method is to set up the expense ledger in sections, with a section for each function—processing, slaughter, and so on. Within each of these sections there would be an account for each expense category—Salaries and Wages, Supplies Used, Depreciation, and similar expenses—applicable to that function.

This method of recording is facilitated by setting up the cash disbursements journal with distribution columns headed up for each of the functions and by recording the functional distribution of each expenditure at the time of entry in the disbursements journal. Some bookkeepers are most familiar with this method and should continue to use it with the modifications necessary to adapt it to the methods described in this manual.

The alternative method was used in the pilot study because it is more adaptable to the conventional records found in most small business. It also allows more flexibility in recording the functional distribution of expenses. The functional distribution can be recorded as the entries are made or at any subsequent time so long as they are completed before the statements are prepared. A trial balance of the ledger can be prepared before the functional expense distributions are completed. This flexibility in timing is an advantage since some functional allocations are easier to make on a monthly basis rather than on an individual-item basis.

Under this second method, the ledger accounts are maintained on a natural classification basis—that is, salaries and wages, supplies used, depreciation, and so on—but each account is expanded to include columns for the functional breakdown. Exhibit XX illustrates a ledger account form that can be used for this purpose. This type form can be purchased through most local office supply stores. A form which can be produced from stock forms carried by all office supply stores is illustrated in exhibit XXI. A stock

GENERAL LEDGER

ACCOUNT NO. _____

NAME OF ACCOUNT _____

DETAIL								DATE	REF.	DEBITS	CREDITS	BALANCE	DR. OR CR.	MONTH

Exhibit XX

Expense Account Name _____

		1	2	3	4	5	6	7	8	9	10
									TOTAL POSTED		
		STORAGE	SLAUGHTER	PROCESSING	CURING & SMOKING	POULTRY DRESSING	SELLING	ADMIN-ISTRATIVE	DEBIT	CREDIT	ACCOUNT BALANCE
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
31											
32											

Exhibit XXI

8- or 10-column ledger sheet—depending on the number of functional classifications used—can be purchased and then overprinted, with the column headings, by a local printer.

In these accounts, the columns for Debit, Credit, and Balance are the standard columns used in any bookkeeping setup. They are used in the normal way for accumulating accounting data regarding the particular expense and for preparation of trial balances. The point of difference from routine accounting procedures lies in the columns that have been added for accumulating the functional distribution. The analysis of expenses to determine amounts to enter in each function column will be made from predetermined percentages, predetermined amounts, or continuous analysis as discussed in chapter III.

Using this method, the cash disbursements journal is maintained with distribution columns for the natural expense classifications, as is usually the case in small business records. A typical Cash Disbursements Journal for a freezer locker plant is illustrated in exhibit XXII with typical entries and an indication of the posting procedure.

Informing the Recordkeeper

For the analysis and allocations to be of any value to the management of the business, they must be reflected in the records and statements. This requires that methods be worked out to communicate the information from the person who makes the allocations to the person who maintains the records and prepares the statements. The degree of formality involved in this process will depend on the circumstances in each situation. If the person who maintains the records and prepares the statements is completely familiar with the operation of the business and thereby makes the allocations, very informal notations will be adequate. If, however, the accounts are maintained and statements prepared by an outside accountant or by a person in the business who is not closely associated with the operating situation, it will be necessary to establish more formal means of communication.

The bookkeeper must have information as to both the natural classification and the functional allocation of expenses. When the checks and invoices are entered in the cash disbursements journal, it is essential that the natural classification of the expenditures be available. If the person recording the checks and invoices is sufficiently familiar with the business operations, the check stubs or check copies and the copies of invoices or payment requests will provide adequate information. If not, notations as to account distribution can be made on the check stub or the invoices by someone who is sufficiently familiar with the operations.

In some situations it might be desirable to use a more formal means of communication such as the check distribution sheet illustrated in exhibit XXIII. This form was designed so that a copy could be prepared for every check issued, showing the natural classification and, when necessary, the functional distribution. It can be modified as necessary to fit the needs of the situation. In some situations these could be prepared only for checks where there might be some doubt as to the distribution.

The bookkeeper must have information concerning the functional allocations when

Exhibit XXII

Cash Disbursements Journal

Date 1960	Paid to or purchased from	Ck. No.	Cash Cr.	Payroll withheld Cr.	Accounts payable Dr.	Accounts payable Cr.	Plant labor Dr.	Office salaries Dr.	Purchases: Hams Dr.	Purchases: Meat Dr.	Purchases: Frozen food Dr.
Jan. 2	A. B. Sessions	263	89 85		89 85						
3	Ace Food Co.	264	264 54		264 54						
7	Jim Jamison	265	78 90	21 10			100 00				
	Ethel Alfonso	266	41 80	10 20			52 00				
30	Ari Packers Inc.	298	465 60						465 60		
	State Power & Light Co.	299	288 70								
	K. C. Repair Co.	300	98 60								
	Petty Cash Fund	301	72 66								
	Blank Electric Co.	JE				39 80					
	A. B. Sessions	JE				172 60					96 60
	Slow Packing Co.	JE				280 50				280 50	
	Seasoning Supplies Co.	JE				298 50					
			8 044 27	280 50	1 025 64 (Note #1)	1 982 66	3 677 51 (Note #2)	298 70	1 050 60	1 262 60	480 50

NOTE #1. Entering unpaid invoices at the end of the month in the manner illustrated avoids the necessity for a Journal entry in the general journal to record these items. The payment at the beginning of the next month should be recorded similar to checks 263 and 264 above. See page 63.

NOTE #2. This amount is posted to the total column in the plant Labor ledger account. The functional classification is determined from the payroll analysis discussed in pages 45-50 and entered in the department columns in the ledger account.

NOTE #3. This amount is posted to the total column in the ledger account. The functional classification is determined by use of predetermined percentages (see exhibit XVI) entered in the department columns in the ledger account.

Cash Disbursements Journal

Other Mdse. Dr.	Processing supplies Dr.	Curing supplies Dr.	Maint. supplies Dr.	Office & selling supplies Dr.	Repairs & maint. – building Dr.	Repairs & maint. – M. & E. Dr.	Advert. & promotion Dr.	Travel & entertain. Dr.	Auto & truck expense Dr.	Other accounts Dr.	Other accounts Cr.	Other accounts Account number
										288 70		512
						98 60						
			10 15	13 20			10 10	22 41	9 60	7 20		531
					39 80							
76 00												
	196 30	102 20										
398 80	367 50	287 80	72 70 (Note #3)	38 90	75 64 (Note #3)	172 70 (Note #3)	88 74	162 60	121 20 (Note #3)	762 80	17 50	

General NOTES

NOTE: Columns should be provided for accounts most often posted from the Cash Disbursements Journal. Thus if there will be only one or two entries per month in a column, the column should not be set up. Rather, the amounts should be posted from the "Other Accounts" columns.

NOTE: The columns used will be determined by the ledger set-up. One column will be adequate for purchases if one account is used in the ledger for all merchandise purchases with columns in the ledger account to distinguish the type of purchase and if some other means of determining the breakdown is provided. The same is true for supplies. See pages 55-58 for a discussion of this point.

the amounts are posted to the ledger accounts. For those accounts to be allocated on the basis of a predetermined fixed percentage, adequate information is provided by the summary worksheet illustrated in exhibit XVI. The bookkeeper will probably find it convenient to enter these percentages at the top of the ledger sheet affected to avoid the necessity of continuous referral to the summary. Information concerning distribution of labor costs is provided by the monthly summary of payroll illustrated in exhibit XIX.

Operating supplies present something of a problem since they must be analyzed continuously on the basis of usage; yet there is no summary provided such as that used for labor. If a separate account is used for each basically different type of supply so that the entire amount in an account can be charged to one function, the separation is made at the time the checks are entered in the cash disbursements journal.

If, however, all operating supplies are accumulated in a single ledger account, a method must be devised to determine the functional breakdown at the end of the month. This can be done by using the check distribution sheet illustrated in exhibit XXIII or a simplification of that form. At month-end the sheets for the amounts charged to this account can be sorted by type of supply and an adding machine tape run to determine the total for each function.

An alternative would be to indicate the functional distribution of each item as it is entered in the disbursements journal by placing a code letter in the column by the amount. If a particular invoice is for more than one type of supply, the amount of each would need to be shown separately in the operating supplies column, properly identified.

Note that these same two alternatives are available for determining the functional distribution for any account that is not subject to a fixed percentage allocation. For example, if office and selling supplies are recorded in the same account, the check distribution sheet or identification in the journal column can be used to determine the amount chargeable to each function.

Strip Forms for Statements

No particular statement form is essential to the methods described in this manual. However, preparing comparative monthly statements is facilitated by using forms which can be aligned in one way while the monthly amounts are being entered on the statements and then shifted to another alignment for completing the statements and for analysis purposes. Preprinting account titles on the statement forms so that the titles do not need to be recopied each month is also advantageous. A single sheet of the statement form used in the pilot study is illustrated in exhibit XXIV. Other statement forms designed to accomplish the same results are available. If forms of this type are used, the procedures for preparation of the monthly Expense Reports are:

1. Set up a sheet for Total Expense and for each function or department by writing in the name of the function and the date.

2. Align the forms for all functions so that only the column for the "Month" on

Exhibit XXIII

Check #_____

Date_____

Check Distribution Sheet

1. Paid to_____
2. Item(s) paid for_____
3. Account charged_____ Amount_____
4. Account charged_____ Amount_____
5. Income tax withheld _____
6. Social security tax withheld _____
7. Other withholding _____ Total Withheld_____
8. Net amount of check . . . . . _____

Functional Distribution

	Line 4 account	Line 3 account
Storage.		
Processing		
Curing & smoking.		
Slaughter		
Selling		
Administrative.		
Total (line 3 & 4 above).		

Exhibit XXIV

Expense Report

Function

Month	%		%	Year to date
		Plant labor		
		Processing supplies used		
		Curing supplies used		
		Office and selling supplies		
		Power and lights		
		Heat and water		
		Repairs and maintenance - Building		
		Repairs and maintenance - M & E		
		Repairs and maintenance - Truck		
		Depreciation - Building		
		Depreciation - M & E		
		Depreciation - Truck		
		Property taxes		
		Payroll taxes		
		Other taxes and license		
		Insurance		
		Workman's compensation		
		Laundry		
		Salaries - Officers		
		Salaries - Office		
		Salaries - Selling		
		Advertising and promotion		
		Travel and entertainment		
		Auto and truck expenses		
		Postage, shipping and mailing		
		Dues and subscriptions		
		Telephone and telegraph		
		Legal and accounting		
		Miscellaneous expenses		
		TOTAL EXPENSES		
		Expenses charged to plant-owned product		
		NET EXPENSES		

VOLUME

Computation of expenses charged to plant-owned product

Volume of plant-owned products

Expenses charged (volume X expenses per unit)

Unit cost (total expenses divided by total volume)

each sheet is exposed. These should be in the same order as the functional distribution columns on the ledger sheet.

3. For each expense account, enter the amounts for the current month in the appropriate space on all the Expense Report sheets. Note that the source of information under Method I, page 62, is the ledger account; under Method II, page 66, the ledger account, predetermined amounts, or independent calculation.

4. After all the expense accounts have been recorded, add each of the Expense Reports and enter the totals. Cross-add the totals and check to the total on the Total Expense Report.

5. Take each Expense Report and place alongside last month's report for the same function, leaving exposed the column for last month's year-to-date.

6. Compute the current month's year-to-date amount for each line by adding the current month's amount to last month's year-to-date.

7. File the statements as illustrated in exhibits I through VIII for analysis and retention.

If other forms are used for the statements, appropriate modifications of these procedures must be made. The essential features to retain are comparative monthly statements for each function and for total operating expenses aligned so that month-to-month variations can be observed and analyzed.

Preparing the Reports

Preparation of monthly statements is essential if there is to be any useful comparative analysis and study of plant operations. The person maintaining daily records should be able to prepare monthly statements by one of the two sets of procedures described next. Two essentially different methods are outlined to allow a freedom of choice to the person preparing the statements.

One method requires that the accounts be brought up to date each month by use of necessary adjusting journal entries. The other method does not require that any adjusting journal entries be recorded on the books, but requires that some of the statement amounts be determined from sources outside the books of account.

For example, under the first method an adjusting journal entry is written up and posted to record the monthly amount of depreciation expense. When this is done, the expense ledger account shows the month and year-to-date amount to be entered on the Functional Expense Report.

Under the second method no entry is made for depreciation so that the Depreciation Expense account will not show any amount until the year-end adjustments are made. This requires that the amount shown on the Functional Expense Reports be obtained from the "Summary of Fixed Percentages and Monthly Amounts" shown in exhibit XVI.

There is a third possible method for preparing monthly statements for a business. This is to use a standard self-balancing worksheet with two columns each for trial balance, adjustments, income and expenses, and balance sheet.

Under this method the unadjusted balances from the ledger accounts are entered in the trial balance columns, all adjusting entries are entered in the adjustments column on the worksheet, the adjusted balances are extended to the appropriate columns on the worksheet, the worksheet is balanced, and the amounts are used in preparation of the statements.

This method is not described in detail in this manual for two reasons. First, the standard eight-column worksheet cannot be used, since a number of additional columns will be needed to properly handle the functional analysis of expenses. This complicates the worksheet. Additional columns should be provided for each Cost of Sales computation and for each functional expense category. The second reason for omitting a detailed description is that this method would probably be used by the persons who would select Method I which follows. Such a person could design and handle the worksheet but would probably find it easier to work directly with the books.

This section is restricted to the procedures for preparing Functional Expense Reports. The procedures and entries necessary for the preparation of the Income and Expense Summary are presented in chapter V. This sequence of presentation is used since the totals from the Functional Expense Reports are used in preparing the Income and Expense Summary. This does not mean that the bookkeeper must follow this exact order; that is, prepare entries for expenses and then prepare the Functional Expense Reports before starting the necessary entries for the Income and Expense Summary. The only requirement is that the Expense Reports be completed first so that the totals can be transferred to the Summary.

Method I - Expense Reports from the Books

In many businesses the staff person who maintains the daily records will have had sufficient training to prepare adjusting journal entries and statements. There will probably be an outside accountant who comes in annually, checks the prepared statements and prepares the tax returns. The staff person in this situation will probably want to integrate the statements with the books by making all necessary journal entries each month.

The advantage of this method is that the trial balance of the books, taken after making the adjusting entries, provides a check on the data included on the statements. This is true because the amounts shown on the statements are taken directly from the accounts after adjustment. The only disadvantage is that preparing and recording a series of entries each month is time consuming.

Adjusting Entries for Expenses

Ideally, the amount of expense shown on a monthly expense statement should represent the exact cost of the goods or services used up or given up during that month in the effort to produce income. Because of the nature of business operations and the difficulties involved in measuring the amounts used up, this ideal is seldom attained.

The alternative which is usually accepted is to concentrate effort on attempting to correctly state the material items; that is, amounts which are big enough to cause a distortion of the reported results if they are improperly handled. Little is gained by the expenditure of the effort necessary to prepare, record, and post an

adjusting entry to record $5 of interest accrued on a note payable. This time could better be spent on checking the accuracy of larger items such as inventory, accounts payable, and similar items.

The following material presents a listing of the adjustments that should be considered each month, and some discussion of the nature of the item. If the amount involved in any adjustment is not significant, the entry can be omitted without creating significant errors in the accounts.

Accounts Payable.—Very few businesses pay, before the end of the month, all invoices for goods and services received during the month. If these are not paid before the end of the month, the records are not complete until the invoices have been recorded. This recording can be handled most readily in the Cash Disbursements Journal if two columns are provided for accounts payable (Accounts Payable - Debit; Accounts Payable - Credit). The procedure is as follows:

1. After the last check written during the month has been recorded, list all invoices for goods or services received during the month and not already paid. These will probably include merchandise purchased, supplies purchased, utilities, repair bills, and similar items. The amount for each invoice will be entered in the column, Accounts Payable - Credit, and in the appropriate purchases or expense column.

2. Total and post the Cash Disbursements Journal in the normal way.

3. When checks are written for these invoices during the following month(s), the credit will be entered in the Cash column as usual but the debit will be entered in the column, Accounts Payable - Debit, instead of the purchases or expense columns.

An alternate procedure is to record these invoices in the general journal, as follows:

1. Summarize the invoices showing the purchases and expense accounts to be charged.

2. Record an entry in the general journal and post to appropriate ledger accounts; debit each purchase and expense account affected and credit Accounts Payable.

3. When checks are written for these invoices during the following month(s), the debit should be to Accounts Payable rather than to the purchase or expense accounts. The checks written can be recorded in the usual way if a journal entry is made reversing the entry to record, Accounts Payable.

Accrued Salaries and Wages.—If the business has employees paid by the week who have done work for which they have not been paid or has employees paid by the month whose pay for the month has not been recorded, a general journal entry should be made to record the unpaid payroll. The entry is: Debit, Plant Labor (and any other payroll accounts affected); credit, Accrued Payroll. The amount should be the total amount earned during the month which has not been previously recorded. The month's total in the expense account after the adjustment has been posted should agree with the amount used in the Labor analysis discussed in chapter III.

This entry should be reversed at the beginning of the following month so that the regular payroll entries can be made in the routine way. The reversing entry is: Debit, Accrued Payroll; credit, Plant Labor (and any other accounts included in the adjusting entry).

Accrued Payroll Taxes.—The employer's share of social security taxes and of State unemployment taxes are usually paid quarterly. The preparation of monthly statements, then, requires that an adjustment be made to record the unpaid tax if the amount involved is significant. The entry is: Debit, Payroll Taxes; credit, Accrued Payroll Taxes Payable (or a separate account can be maintained for each type of tax). The amount can be an exact computation based on detailed payroll records. An acceptable alternative is to estimate the total, based on total payroll for the month multiplied by the rates for each tax. This estimate should be corrected each quarter when the detailed computation needed for the quarterly return is made.

Supplies Used.—In most businesses, the amount of office, selling, and maintenance supplies on hand does not vary significantly from month to month. If this is the case, the statements will not be distorted by using as expense each month the amount of supplies purchased during the month rather than the amount used up. Thus, no adjusting entry is needed for these supplies.

Processing supplies are often purchased in large quantities and used over several months. Thus, to show as expense the amount purchased during the month rather than the amount used up could cause a serious distortion in the statements. The proper procedure for determining the cost of processing supplies used during a period is illustrated next:

Inventory of processing supplies at beginning of period	$1,240
Add: Purchases of processing supplies during period	462
	1,702
Deduct: Inventory of processing supplies - end of period	1,160
Processing supplies used	$ 542

To facilitate the handling of supply cost in the records, the supplies that are to be included in expenses as used should be separated from those that are to be included in expenses when purchased. If it is decided that processing supplies are to be charged to expense as used rather than as purchased, the procedure for recording should be as follows:

1. When processing supplies are purchased, the debit should be made to the Inventory of Processing Supplies account.

2. At the end of the month, the amount of supplies used should be determined as just illustrated. An entry is then made in the General Journal to reduce inventory and charge the supplies used to the expense account.

If this method were used for the data presented in the preceding illustration, the Inventory of Processing Supplies would show a balance of $1,702 before adjustment. The adjusting entry would be:

Processing supplies used	$542	
Inventory of processing supplies		$542

After this entry, the balance in the inventory account would be $1,160, which is the

appropriate amount to carry forward to the next month.

Depreciation - Building, Machinery and Equipment, etc.—Depreciation is usually a significant portion of total expenses in a business operation. The total annual depreciation charge should be determined from the records established for accounting and tax purposes. One-twelfth of the annual amount should be recorded by general journal entry each month. The entry should be:

Depreciation - building	xxx	
Depreciation - machinery & equipment, etc. (the number of accounts used depends on the breakdown desired in the records)	xxx	
Accumulated depreciation - building		xxx
Accumulated depreciation - machinery & equipment, etc.		xxx

Property Taxes.—Property taxes are usually paid annually and are usually significant in relation to total expenses. Thus, the annual amount of tax should be determined and one-twelfth of that amount should be recorded each month. The entry should be:

Property taxes	xxx	
Accrued property taxes payable		xxx

When the property tax is paid, the amount should be debited to Accrued Property Taxes Payable.

Insurance.—Insurance premiums are usually paid for a period of one or more years. The annual amount of insurance cost should be determined from an analysis of insurance similar to that presented in exhibit XV. One-twelfth of this amount should be recorded each month by the following entry:

Insurance expense	xxx	
Prepaid insurance		xxx

When an insurance premium is paid, the amount should be debited to Prepaid Insurance.

Other Adjustments.—The items included above represent the type of adjustments usually needed to properly present expenses on monthly statements. Adjustments for cost of goods sold and income accounts are discussed in the next chapter. Some businesses will have other significant items that are paid in lump sum amounts for long periods and, hence, will need to set up adjusting entries to show monthly statements without significant distortions.

Source of Statement Amounts

After the necessary monthly adjusting entries have been posted, the functional breakdown for each expense account must be determined and entered. Then the ledger accounts will show the amounts to be used on the monthly statements. The statements can then be prepared by the procedures described under "Strip Forms for Statements" shown on pages 58-60 or by other methods.

Standard or Monthly Journal

The use of a Standard Journal for recording monthly adjusting entries is recommended because it eliminates the time needed to write out the account titles for the accounts adjusted each

month and it is a check against the omission of necessary entries. This journal can be in either of two forms. One method is to mimeograph or preprint sheets with the format for all the adjusting entries set up but with the amounts omitted. A set of these sheets would be used for each month by inserting that month's amounts and posting from the sheets to the ledger accounts. Since these sheets are a formal part of the accounting records, they should be retained in an adequate storage place.

The other format is the same except that instead of using a separate set of sheets for each month, a set of 24-column sheets is used to provide a debit and credit column for each month's amount. Twenty-four column sheets with an item space which will fit into the binder used for the other journals can be purchased at most office supply stores. With this form, the account titles for the adjusting entries will need to be written once a year.

Method II - Without Adjustments

Many of the persons maintaining the day-to-day records for a business do not record adjustments in the accounts. They prefer to leave the responsibility for adjustments and statement preparation to their outside accountant. This section outlines procedures whereby monthly statements can be prepared without recording adjustments on the books. It is designed so that the staff person who maintains the daily records can prepare the monthly statements. Any person who maintains the day-to-day records should be able to prepare adequate statements using the procedures outlined here.

Under method I adjusting entries are recorded so that the ledger accounts reflect, insofar as possible, the actual amounts of goods and services given up or used up during the month in the effort to produce income. Without these adjusting entries, sources outside the ledger accounts must be used for some of the statement amounts. The basic idea remains the same; that is, the monthly statement should show the actual amounts given up or used up during the month. If a particular expense ledger account does not reflect this amount, the amount must be obtained from an outside source.

The advantage of using this method is that it avoids the necessity of preparing and recording adjusting journal entries. Oftentimes an individual working with accounting records can easily determine the amount that should be shown on the statements, but would not attempt to go through the formal recording procedures necessary to have the ledger accounts reflect these amounts. The time saved by avoiding the formal recording procedure provides an added incentive to use this method.

The major disadvantage of this method is that it eliminates the check on the accuracy of the amounts which is provided by taking a trial balance after recording the adjusting entries. This disadvantage can be offset by taking extra care in preparing the statements and by investigating unusual changes in amounts from month to month to assure that the change is not due to an error.

There are three sources that will normally be used to obtain amounts to show on the monthly statements:

1. The expense ledger. Even though no adjusting entries are recorded, the ledger accounts will show the proper amounts to be used on the statements for many of the expense accounts. If the accounts payable

(unpaid bills) are recorded each month, the expense accounts will show the statement amounts for the major portion of the accounts.

2. Predetermined amounts. For some of the expense accounts, such as Depreciation, the monthly statement amounts are determined at the installation of the system and corrected at least annually for changes. These amounts are entered on the statements each month without recording them on the books.

3. Independent computation or accumulation. In some cases, such as Processing Supplies Used, the ledger accounts do not show the amounts used up during the month, nor can an accurate monthly amount be predetermined. For these it is necessary to compute or accumulate the amounts independently each month.

The end-of-the-month procedures for preparing the monthly Functional Expense Reports described here are based on the assumption that the cash disbursements journal illustrated in exhibit XXII and the ledger account illustrated in exhibit XX or XXI are used in the recording procedures. If the expense ledger is set up with a separate section for each functional category, appropriate modifications of the listed procedures will need to be made.

Preliminary Procedures

Preparation of the Functional Expense Reports will be facilitated by recording all unpaid bills in the Cash Disbursements Journal before it is totaled and posted. The procedure for recording unpaid bills is explained in detail on page 63 under the caption "Accounts Payable."

If this is done, the ledger account will show the proper amount to include on the Expense Report for all of the accounts which are to be charged as expense in the month of purchase. In the list of procedures that follow, it is assumed that the unpaid bills have been recorded.

If not, a separate calculation will need to be made for any account affected by an unpaid bill at the beginning or end of the month to determine the amount to include on the statements. This computation will be as follows:

Amount posted to account during month	xxx
Deduct: Unpaid invoice(s) chargeable to this account at beginning of month	xxx
	xxx
Add: Unpaid invoice(s) chargeable to this account at end of month	xxx
Amount purchased or incurred during month	xxx

After the expense accounts have been posted, or the statement amount computed as explained above, the functional distribution should be checked (or recorded) to assure that the total month's posting has been allocated to the appropriate functions. Whatever the source of the amounts—ledger account, predetermined amount, or independent calculation—it is essential that the functional allocation be determined before the amounts are entered on the statements.

Preparation of the statements is facilitated by having all the statement account titles written or printed on the forms so that the only procedure necessary at this point is to enter the amounts in the appropriate spaces. This can be accomplished by using preprinted forms or by writing, typing, or mimeographing similar forms.

Sources of Statement Amounts

Under method II, the ledger accounts do not show the amounts to be entered on the statements for all accounts. If an account would require an adjusting entry as explained under method I, outside sources must be used for determining the statement amount under this method. Listed below are the accounts that usually will not show the proper amounts to include on monthly statements, along with an indication of the sources of the statement amounts.

Plant Labor.—If there are employees who have not been paid at month-end for all the work done during the month, the expense ledger account does not show the proper amount of expense. The Monthly Payroll Summary Sheet (exhibit XIX) should include all the month's pay for each employee in this group. The totals from the payroll summary sheet are the amounts to include on the Expense Reports.

Payroll Taxes.—The employer's share of social security taxes and of State unemployment taxes are usually paid quarterly; hence, the ledger account does not show the proper amount to include on monthly statements. The amount to be entered on each month's statements can be an exact computation based on detailed payroll records, prorated to the functions on the basis of the percentages calculated in exhibit XIV. An acceptable alternative is to estimate the total based on total payroll chargeable to each function multiplied by the rates for each tax. This estimate should be corrected each quarter to agree with the total reported on the tax returns.

Processing Supplies Used.—An independent computation should be made each month to determine the amount of supplies used during the month. The computation is:

Processing supplies inventory - beginning of month	xxx
Add: Processing supplies purchased this month	xxx
Supplies available for use	xxx
Deduct: Processing supplies Inventory - end of month	xxx
Processing supplies used this month	xxx

If the overall processing function is to be separated into its component parts (Slaughter, Curing and Smoking, and others), the supplies used for each component should be computed separately.

Depreciation - Building.—The monthly amount and functional distribution of this account are determined at the installation of the system and corrected at least annually for changes in amount or allocation. (See exhibit XVI.) These predetermined amounts are entered directly on the Expense Reports.

Depreciation - Machinery and Equipment.—Procedure same as for Depreciation - Building.

Insurance.—Procedure same as for Depreciation - Building. (See exhibit XV as well as XVI.)

Taxes - Property.—Procedure same as for Depreciation - Building.

Other Taxes and Licenses.—In many businesses, Other Taxes and Licenses will be sufficiently significant to warrant using an estimated amount each month rather than including them on the statements in

the month of payment. If so, the estimated monthly amount should be determined and allocated to the appropriate functions and these amounts shown on the monthly statements.

Other Predetermined Amounts.—If there are other accounts which are significant in amount and which are paid in lump sums for a long period of time, the monthly statements should show an estimated monthly amount rather than the amount paid during the month.

The remaining accounts will be included on the statements in the amount shown in the ledger accounts. If the unpaid invoices have not been recorded as recommended under "Preliminary Procedures", page 67, the statement amount for many of the expenses will need to be computed rather than use the amount in the ledger account.

Accumulating Volume Statistics

One of the most important objectives of preparing comparative monthly statements is to determine the effect of changes in volume on operating expenses. An accumulation of information showing the volume of work done during the month is essential for use with the expense reports for this purpose.

Another important use of a knowledge of the daily volume handled is in planning the work force needed at specific times. Knowing the preceding year's daily variation in volume provides a basis for preplanning the hiring of additional help and thus avoiding the problems of over staffing or under staffing.

To accomplish these objectives, it is necessary to accumulate reasonably accurate volume statistics. A worksheet that can be used to accumulate volume statistics for Slaughter, Processing, and Curing and Smoking is illustrated in exhibit XXV. This worksheet provides the detail needed to aid in controlling and planning for the labor force. The worksheet can be appropriately modified if the specific information provided is not needed.

Data for the worksheet should be accumulated from the tickets or work orders written up when the customer brings in the product or when work on plant-owned products is ordered. In some cases, it will be necessary to accumulate the volume of plant-owned products separately. If so, the worksheet should be modified to provide for this.

A problem arises in determining the volume to report for products which are to go through several processes. For example, a live hog is brought in to be slaughtered, blocked, and trimmed; the lard is to be rendered; parts are to be cured and smoked and the remainder to be wrapped and frozen. If the dressed weight of the hog is 200 pounds, how much volume should be reported?

The answer to this question will depend on the amount of information desired and on the degree of functional breakdown in the records. The total volume that passes through a separate department—for example, Slaughter or Curing and Smoking—should be reported even if the same product passes through other departments. As to products that go through more than one process within the same department, an acceptable criterion is as follows: If a separate or additional charge is made for the additional process, the volume passing through the process should be accumulated

Exhibit XXV

Daily Volume Statistics — Month of

	Date 11/1	11/2	11/3	11/28	11/29	11/30	Months total
Slaughter							
# heads - beef							
Dress weight - beef							
# heads - pork							
Dress weight - pork							
Processing							
Whole animals - beef							
# heads							
Dress weight							
Whole animals - pork							
# heads							
Dress weight							
Cut pieces							
# pounds - beef							
# pounds - pork							
Miscellaneous processing							
Lard rendering # pounds							
Bacon slicing # pounds							
Other # pounds							
Curing and smoking							
Hams							
# pounds cure only							
# pounds cure and smoke							
Shoulders							
# pounds cure only							
# pounds cure and smoke							
Sides							
# pounds cure only							
# pounds cure and smoke							

even though the same product has been counted in other processes.

If it is decided that the effort and time involved exceed the value of accumulating volume statistics by the method illustrated, an alternative method can be used to arrive at an approximation of the volume. The approximate volume is determined by dividing the income from a function by the normal charge for the service. For example, if the income from processing for a month is $1,320 and the normal charge is 6 cents a pound for processing, the volume is computed as follows:

$$\frac{1,320}{.06} = 22,000 \text{ pounds}$$

This method has the effect of including extra poundage in the volume for all services for which an extra charge is made. However, if the extra charge for the additional service is at a different rate, the poundage included is an equivalent rather than actual weight. To illustrate, assume that the $1,320 income above was from the following:

15,000 lbs. of regular processing at 6¢ -	$ 900
10,000 lbs. of lard rendering at 3¢ -	300
6,000 lbs. of bacon slicing at 2¢ -	120
31,000 lbs.	$1,320

Although the actual daily volume accumulation would show a total of 31,000 pounds, the computed volume shows only 22,000 pounds. This is true because the lard rendering and bacon slicing are included at the equivalent poundage which would produce the stated income if the charge was 6 cents a pound. The 22,000-pound computed amount is made up of 15,000 pounds of regular processing, 5,000 pounds (that is, $300 ÷ .06) of lard rendering, and 2,000 pounds (that is, $120 ÷ .06) of bacon slicing. This can be corrected and an actual volume computed by this method if the income from each operation is recorded separately. If it is known that the income from 6-cent processing is $900, from 3-cent work is $300, and so on, the total actual volume can be computed.

Unit Costs

Many operators want to obtain a unit cost figure to compare with their schedule of charges, to use in computing a charge for work on plant-owned products, or for other purposes. The formula for computing average unit cost is very simple; it is total cost for the particular function for the period divided by total volume for the same period. Unit costs computed in this manner will be incorrect and misleading unless the "unit" of volume is uniform. In the Processing function, if the volume includes lard rendered, meat blocked out and trimmed, meat cured, and so on, the "unit cost" figure is meaningless since the unit of volume contains a number of substantially different processes.

A meaningful unit cost figure can be obtained in two ways. The first possibility is to set up a separate department or functional category for each process of any real significance, and accumulate the expenses for these departments. Obviously, it would be impractical to set up a separate department for cutting and trimming beef, cutting and trimming pork, wrapping and freezing, and other processes. The cost of maintaining such records would far outweigh any possible

benefits to be derived from the information. Nevertheless, separate departments can be established for the major processes and meaningful data obtained therefrom.

The second alternative, which will be more useful to most operators, is to make periodic special studies to determine the unit cost of various processes. For example, the unit cost of curing a batch of hams can be determined by the following procedures:

1. Select a batch of hams representative of the quantity, size, and other characteristics of the batches for which unit cost is needed. Weigh and record the weight.

2. Tag this batch so that it can be easily identified.

3. Maintain detailed records of the labor time used on this batch from the point of checking in from the customer to the point of delivery to the customer. Labor time should be included for all the operations performed. The operations should be performed at the normal pace for the employees.

4. Maintain detailed records of all supplies used in handling this batch of hams. The quantity should be weighed or measured accurately, and an effort should be made to assure that the quantities represent the amounts usually used for normal operations.

5. Compute the labor cost by using the wage rate multiplied by the time for each employee.

6. Compute the supplies cost by using the quantity of supplies multiplied by the normal cost of those supplies.

7. Compute an "overhead" cost for the operation. A useful average overhead amount can be computed from the Expense Reports for the function in which the process is being performed. For a typical month, add all the cost for the function other than labor and supplies. Divide this total by the amount of labor cost charged to the department for the same month. This gives an average overhead cost per labor dollar. Multiply the average cost by the labor cost computed in step 5.

8. Add the labor cost, supplies cost, and overhead cost and divide the total by the number of pounds in the batch.

The figure produced by these procedures will represent the average unit cost of the process. Particular care must be taken in selecting the batch and in maintaining the records to assure that it is representative of normal operating conditions. Subsequent tests of the same type should be made to check the validity of the computation, to check for changes in cost, or to determine cost under different operating conditions. Similar special studies can be made to determine the cost of any distinguishable processes in the business.

Processing Plant-Owned Product

Most firms in the industry process or manufacture plant-owned products for sale. In this case, the departmental statements will be distorted if the income (sales price of product) is included in one department while the cost of the work is charged against another department (processing, curing and smoking, or others). To avoid the distortion of the departmental statements and to allow a determination

of the profit produced by the product, it is necessary to make an interdepartmental transfer.

Several methods can be used to determine the amount to transfer from the producing department to the selling department. Three methods for computing the amount to be transferred are next discussed with an indication of the situation in which each method will be most appropriate. The entries necessary to record the transfer are discussed in chapter V.

Transfer at "Selling Price"

Firms in which plant-owned products represent a minor portion of total volume may calculate the amount to be transferred at the regular rates charged to customers for the service performed. This requires that an accurate record of the volume of plant-owned products be accumulated. This volume multiplied by the regular charge for the service performed is the amount to be transferred. This amount should be added to incomes in the processing department and to cost of goods in the selling department.

This method is valid for preparing departmental statements in that each department is, in effect, treated as a separate business. Each department shows income for all services performed and cost for all services received, whether dealing with outsiders or another department. An important reason for using this method is that it avoids the distortions created by using the cost of services performed at different levels of operations. If monthly average cost is used in making the transfer, the per pound cost will vary widely—depending on the total volume handled in the producing department each month. The third, and possibly most important, reason for using this method is the ease of handling it.

The disadvantage of this method is that in the preparation of overall statements total business income and expenses, but not net income, are overstated by the amount of the interdepartment transfer. The inventory of plant-owned products on hand and of net income are overstated by the profit on the processing of plant-owned product—by the amount that the charge for the service exceeds its cost. Even if these distortions are significant, this method can be used for the preparation of comparative monthly statements with appropriate adjustments being made to correct the annual overall statements.

Transfer at Average Cost

If plant-owned product represents a substantial portion of the volume for a producing department, the transfer can be made at the average cost of the service rendered. Under this method the total cost of operating the producing department is accumulated on the Functional Expense Report. This total operating cost is then prorated between the plant-owned product and the customer-owned product on the basis of actual unit cost or on the basis of unit cost computed during a normal operating period.

Of these two methods, the more acceptable one is to compute an average unit cost during a normal operating period and use this cost multiplied by the volume of plant-owned product as the amount to transfer. An acceptable set of procedures for computing average unit cost is explained on pages 71-72. This unit cost should be recomputed periodically to check the accuracy of the interdepartment transfer.

This procedure avoids the problem created by having a number of different

operating processes within the same department. It also avoids the distortion created by volume changes. Using this method, the cost of nonproductive time remains in the production department to be charged against the income from customers. This is as it should be if the primary purpose of the production department is to render services to customers.

The alternative method is to compute the actual unit cost each month, based on the total volume handled and total cost in the department. This requires that accurate volume statistics be accumulated for both plant-owned and customer-owned products. This total volume divided into the total department expenses for the month gives an average unit cost. Average unit cost for the month multiplied by the number of units of plant-owned product gives the cost attributed to plant-owned product. This is transferred out of the department, leaving the cost attributed to customer-owned product for comparison with income from customers.

The major disadvantage of this method is the difficulty of determining an appropriate set of volume figures for making the proration. As explained in the section on "Unit Cost," pages 71-72, when the departments used for the Functional Expense Reports include a number of different operating functions, any average unit cost figures computed will have little meaning. Unless the different operating functions are performed on plant-owned product in approximately the same proportion as for customer-owned product, there is no valid basis for determining the proration of cost.

Another disadvantage of this method is that the per unit cost transferred to the selling department will vary substantially from month to month because of differences in the total volume of work done. In an extreme situation the per unit cost will, during the summer months, increase to several times that incurred during the busy season. Using such a distorted production cost in computing the income from selling the product is difficult to justify.

A Separate Department

In plants where processing plant-owned products differs substantially from custom processing (for example, manufacturing sausages) where substantially different facilities are used in the manufacturing process and the volume of manufactured product is large, the best procedure is to set up a separate department. In this case the manufacturing department or function would be assigned its proportionate part of labor, supplies, utilities, depreciation, and so on, as discussed in chapter III.

However, if the manufacturing process uses the same space, equipment and labor used for custom processing and the only difference is special supplies and special handling, it would be impractical to set up a separate department. If this is the case, the average unit cost computed by a special study is the best basis for determining the amount to transfer from the operating department.

A problem arises when the product goes through the normal process in one or more departments before getting to the special department for final manufacture. This situation requires a combination of methods. The special manufacturing department should be set up separately with the cost incurred in that department accumulated in the normal way. The cost incurred in the other departments for this product should be transferred on the basis

of average unit cost. The cost of goods sold for the manufactured product would then include the cost of raw material, the transferred cost from each production department, and the cost incurred in the manufacturing department. The methods of preparing the Income and Expense Summary and the journal entries needed to record the transfers are discussed in chapter V.

Chapter V

Preparation of Income and Expense Summary

After the Functional Expense Reports have been completed, preparation of the Income and Expense Summary requires that proper statement amounts be determined for the various sales and income accounts, for cost of sales for each type of sale, and for other income and outgo items. These are described in detail in this chapter.

The specific procedures described here assume that the basic format illustrated in chapter II is used for the statements and that the Functional Expense Reports have been completed. If another format is used, minor modifications in these procedures will be necessary.

As in the case of the Functional Expense Reports, two basically different sets of procedures are described, one of which should be applicable to almost every situation. The first set of procedures requires that necessary adjusting journal entries be recorded on the books each month; therefore the amounts to record on the statements are taken directly from the ledger accounts. The second set of procedures does not require any monthly adjusting entries but requires that some of the statement amounts be obtained from sources (worksheets or computations) outside the formal records.

How Much Detailed Breakdown?

Before discussing procedures for determining amounts to show on the Income and Expense Summary, it is necessary to discuss the type and amount of detailed information that should be accumulated in the records. The income accounts for a business should be broken down in sufficient detail to provide information on income received from each important income-producing activity. The cost of producing that income should be broken down in the same way so that the two can be matched.

Income from sources that are relatively unimportant can, however, be combined with other income items without seriously distorting the overall picture. The item with which the minor income is combined should be determined by the relationship between types of income. For example, assume that income from the cost of services is to be broken down into four categories—storage, slaughter, processing, and curing and smoking. In this case, storage income should include all income from that basic service—bulk storage, long-term locker rentals, short-term locker rentals, and any other storage charges. Slaughter income should include fees charged for slaughtering as well as income from sale of heads, hides

and offal received as a result of the slaughtering service. Processing income should include fees charged for processing, rendering lard, slicing bacon and other processing services, as well as income from the sale of overrun lard and scraps.

Even in those businesses which decide to combine some of the service income items for statement presentation, it is often desirable to maintain records so that information is available on the source of the income. For example, information showing separate amounts for storage income from bulk storage, annual locker rentals, and short-term locker rentals could be valuable to indicate the changes in the structure of this activity that occur over a period of time.

As another example, in some business situations it might be decided to combine slaughter, processing, and curing and smoking into one category for reporting income and operating expenses. If this is done, valuable information about the income from various sources can be accumulated in the income accounts with a minimum of effort. A ledger account form similar to the ones illustrated in exhibits XX and XXI can be used to facilitate this type of record. The columns provided for detailed analysis would be used to show the breakdown according to source.

Income from sales should be broken down so that a separate amount is accumulated for every important type of product which is different in nature or which carries a significantly different markup percentage. If a business has a substantial amount of sales of a manufactured product, these sales should be recorded separately. If a business has substantial amounts of sales through essentially different methods of selling (wholesale truck routes, retail truck routes or store sales) an analysis on this basis might be most appropriate.

In many large businesses, sales are analyzed to the extent that they have records showing how much of each class of product is sold by each salesman and further divided by the method of transportation used to deliver the product. Obviously this extent of analysis is not practical for a small business. How far, then, should the small business go in maintaining analyses? As in the case of functional allocation of expenses the criteria must be usefulness of the information and relative ease of accumulating the data.

When a business sells several lines of products and also uses different methods of distribution—over-the-counter, route trucks, and mail delivery—should the sales be accumulated by type of product, by method of distribution, or both? Certain factors should be considered in answering this question.

Usually, different types of products carry substantially different markup or gross profit percentages. Furthermore, it is normally much easier to determine cost of goods sold for different products than for the products sold using different methods of distribution. For these reasons the primary method of accumulating information should be by type of product. Additional routine accumulations or special studies can be used to analyze the information as to method of distribution.

An illustration will indicate why it is more useful to accumulate sales information on the basis of type of product. Assume that a business is selling meats, frozen food, and other merchandise over

the counter and also has two truck routes provisioning home freezers. Assume further that the price list is the same for both methods of distribution. If the manager wants to know whether the truck routes are producing enough income to "pay their way," the answer can be determined in the following way:

1. From the monthly Income and Expense Summary determine the average gross profit margin for each line of product. (See page 94.)

2. Through special study or continuous analysis determine the amount of sales of each type of product for the truck (or trucks) for a period.

3. Multiply the sales of each line of product by the gross profit margin for that line of product to determine the amount of gross profit produced by the truck for the period.

4. Through special study or continuous breakdown determine the cost of operating the truck for the same period. If the trucks have been set up as a separate department, their operating cost will be readily available and could be broken down to an average cost per mile. Then for any one truck, the mileage driven multiplied by the average cost per mile will give a reasonable estimate of the cost of the truck. If the trucks have not been set up separately, a special study will be needed to determine the cost. The procedures for making such a special study are discussed in Chapter II, pages 26-27.

5. Deduct the cost of operating the truck from the gross profit on the sales made.

Note that if the two trucks have operated on essentially different routes—for example, one rural and the other urban—the study would need to be made for each truck separately to be of any real value. This type of study can be refined to the point of determining the minimum order-per-mile-driven needed to provide a profit by determining the mileage, and the time, necessary to take the order and make deliveries.

If, in the above illustration, information regarding sales has been accumulated on the basis of method of distribution only, gross profit produced by the truck sales cannot be accurately determined. This is true because the cost-of-sales data can seldom be accumulated on any basis other than type of product.

For example, if the same types of frozen food are sold over the counter and from a truck, it would be very difficult to determine the amount of purchases and inventories that applied to truck sales as distinguished from over-the-counter sales, whereas it would be relatively easy to determine the amount of purchases and inventories for frozen food as distinguished from meats.

Suppose, for example, sales information is broken down only on the basis of method of distribution, and cost of sales information is available only on the basis of type of product. Then the only gross profit percentage that can be computed is an overall percentage computed by comparing the total of all sales to the total of all cost of sales. This composite or overall average percentage does not provide valid information for a study of segments of the operation when the markup is significantly different for different types of product.

When the primary accumulation (the basic journal record) is made on the basis of type of product sold, it is often relatively easy to make a secondary analysis on the basis of method of distribution. Often the sales tickets are, or

can be, set up so that those applicable to a particular method of distribution can be easily separated. If this is done, the secondary analysis can be made each month by sorting the sales tickets and adding each group. This information can be recorded in the detail columns of the ledger account for continuous accumulation. If this type of analysis is too burdensome on a continuous basis, it can be made for a short period as a special study when the information is needed.

One additional point should be considered in connection with recording sales income. The sales account should include only the sales price of the merchandise sold. If the amount collected—or to be collected—includes sales tax, interest charges, carrying charges, or delivery and installation charges, these amounts should not be included as a part of sales but rather should be accounted for separately. This requires that the Cash Received and Sales Journal include separate columns for accumulating these items.

Often a quarter, half, or whole animal will be purchased for the account of a customer and processed. The customer is billed for the sales price of the animal plus a processing charge. Under these circumstances the sales account should include sales price of the animal only. The charge for processing should be recorded as processing income.

Statement Amounts for Income

Ideally, the amount of income shown on financial statements should represent the exact amount earned during the period covered by the statement. If the income accounts showed the exact amounts earned during the period and the cost and expense accounts showed the exact amounts of goods or services used up or given up in the effort to earn the income, the statements would represent perfection of the accounting process. As in the case of expenses, this ideal is seldom realized in recording income. Nevertheless, the ideal should be kept in mind; and when the amounts involved are substantial, every effort should be made to determine and record the proper amounts.

Method I - Income Amounts from the Books

The time that income is collected in cash is quite often not the proper time for including it on the income statement. Income is often earned before the amount is collected and in many other cases is earned after the amount is collected. For the sale of merchandise, the most appropriate time for including the income on the statement is the period (month) during which the sales contract is completed. This means that the Sales account on the statement for a month should include all sales made during the month whether for cash or on account.

For the sale of service, the most appropriate time for including the income on the statement is the month during which the service is rendered. This means that the service income accounts should include the income from all services rendered during the month whether the cash for the service was received before or is to be received later.

Adjusting Entries for Income

As previously indicated, the ideal of determining the exact amount of income

for a particular month is seldom attained. The following material presents a discussion of the various types of income and the adjusting entries that may be needed to show the proper statement amount. In any case where the amount involved in a proposed adjustment is insignificant, the adjustment can be omitted without creating significant errors in the statements. When the necessary adjustments have been made, the ledger accounts will show the correct amounts to record as income on the Income and Expense Summary.

Sales.—Sales should be recorded at the time the sale is made whether or not the cash is collected at that time. Most businesses accomplish this by writing up and recording sales tickets for all credit sales and using sales tickets or a cash register accumulation for recording cash sales. If this is done, the sales accounts will show the proper amounts to include on the monthly statements and no adjustments will be necessary.

Some businesses that sell freezers and other heavy appliances on the installment basis prefer to report income from those sales as the sales price is collected rather than when the contract of sale is made—that is, the installment basis of accounting. Ways of recording and adjusting for this method of handling sales are adequately discussed in most intermediate accounting textbooks and, hence, will not be discussed here.

Some businesses which do primarily a cash business sometimes do not record credit sales on the books until the cash is collected. They will set up a memorandum record of the amounts due and send out bills to the debtor but will not enter the amount due on the books. If the amount which has not been recorded on the books is significant, an adjusting entry should be made as follows:

Accounts receivable	xxx	
Sales - meats		xxx
Sales - frozen foods		xxx

[The credit accounts will include all the different types of sales involved.]

Recording and adjusting for the next month will be facilitated if this entry is reversed as of the beginning of the following month. If this is done, the adjustment for the second month will be exactly the same as the one shown above with the new amounts inserted. The reversing entry would be:

Sales - meat	xxx	
Sales - frozen foods	xxx	

[The same accounts and amounts as in the adjusting entry.]

Accounts receivable	xxx

If this entry is not made in the second month, the month-end adjustment for that month will need to be appropriately modified.

Storage Income.—The storage function usually produces three different types of income—bulk storage, overflow or short-term locker rental, and annual locker rental. In addition, the customer is usually required to make a key deposit, which is returned when the key is returned. Key deposits are not income but rather create a liability that should be recorded at the time the deposit is received and reduced when the deposit is repaid or when it is known that the customer will not claim the deposit. In most businesses key deposits

are so small in comparison with other statement amounts that any accounting procedures now used can be continued without creating significant errors in the accounts.

Bulk storage income may be collected at any of three times—when the product is put in storage, monthly (for long-term storage), or at the time the product is taken out of storage. In most situations recording bulk storage income at the time the money is collected is by far the easiest method of recording and does not cause any significant distortion of the reported income. If this is the case, no adjusting entry is necessary.

If the situation is such that bulk storage income is substantial and is collected in such a way that monthly amounts are substantially distorted, appropriate adjustments should be made. For example, if a large part of the storage space is leased with the rent collected quarterly, an entry should be made each month to record the monthly rental.

Overflow or short-term locker rental is usually collected or billed at the time the locker is rented and the term is usually 1 month. In this case, monthly income will not usually be distorted by recording the amount as income during the month of collection or billing. If the term of rental is longer, the amount is large, and the rentals are concentrated in 1 or 2 months, appropriate adjusting entries to spread the income over the period of earning will be needed.

Annual locker rentals usually constitute a significant part of total storage income and in many cases a substantial part of total plant income. If the rentals are spread fairly evenly over the entire year, the monthly income statement will not be distorted by showing the amounts as income in the month of billing. The balance sheet is distorted, however, since the amount of Deferred Locker Rentals is omitted from the liabilities. In most situations the annual locker rentals are sufficiently important to warrant a monthly adjusting entry.

The monthly adjustment will be much easier to handle if annual locker rentals are recorded in Deferred Locker Rentals rather than in Storage Income at the time of entry on the books. This avoids the necessity of a detailed analysis of the amounts recorded as storage income during the month, since bulk storage income and short-term rentals (amounts recorded in storage income under this procedure) will usually be shown as income in the month in which they are recorded. This means that the adjusting entry needs to add to income only the proper proportion of the annual rentals. The entry is:

Deferred locker rentals	xxx	
Storage income		xxx

The amount to be recorded can be computed in either of two ways. The first method will probably be easier to handle and produces a reasonable approximation of the monthly earnings. To determine the amount by this method, multiply the number of lockers rented on an annual basis by one-twelfth of the average annual locker-rental rate. This can be refined somewhat by determining the number of lockers rented at each rate and multiplying by one-twelfth of that rate.

The second method provides a more accurate determination of the monthly income amount and of the balance to defer. This requires that a lapsing schedule, similar to the one illustrated in exhibit XXVI, be prepared and kept up to date.

On this schedule one-half a month's rent is recorded as income in the month of billing. This is appropriate if the rent agreements run from the day they are made. If all rents run from the first day of the month, a full month's income should be taken in the first month. If the rent agreements effectively start the first day of the following month, no income should be taken in the first month.

Slaughter Income.—The income from the slaughter function usually includes fees collected from the customer, income from sales of hides, heads, and offal and, in many cases, fees for hauling. The fee for hauling is in reality trucking income and should be matched against the costs of operating the trucks. Usually, however, the trucking is so interwoven with operating the slaughter operation that a separation of income and expenses would not be practical. In such a case, the fees charged for trucking can be combined with slaughter income. If the income from trucking is included in the slaughter income, the cost of operating the truck should be included in slaughter expenses or prorated between slaughter and other functions on the basis of proportionate usage.

The fees collected for slaughtering and hauling are usually billed or collected at the time the service is rendered; thus no adjusting entry is needed to properly state the monthly income. The hides, heads, and offal from the slaughter function are sometimes accumulated and sold only when a fairly large quantity is on hand. In some cases this accumulation is so large that the monthly income is significantly distorted by recording income at the time these products are sold. If this is true, an adjusting entry should be made to record the estimated value of the salable product on hand at the end of the month.

Processing Income.—Income from the processing function usually includes fees for chilling, cutting, wrapping, and freezing meats, for processing vegetables, rendering lard, slicing meats, and similar services. It also includes income from sales of inedibles and overrun lard. As a general rule the fees charged for processing are collected or billed at approximately the same time that the services are rendered. Therefore, there is usually no need to make an adjusting entry related to processing fees.

Income from the sale of overrun lard is often quite substantial in amount and the sales are often made long after the service is performed. If the amount involved is substantial in relation to income from other parts of the processing function and if the sales are made in the months after the services are performed, an adjusting entry should be made to record the income in the month in which it is earned. The entry would be:

Inventory - overrun lard	xxx	
Processing income		xxx

The amount would be the estimated total sales value of the product on hand at the end of the month. This entry should be reversed as of the beginning of the following month.

Another item that will sometimes be included in Processing Income—and might be applicable to slaughter and cure and smoke income—is the charge for processing plant-owned product. The different methods of accounting for work done on plant-owned product are discussed in pages 72-75. If the billing price method is selected, all the expenses of the processing department remain in processing expenses, and the income attributed

Exhibit XXVI

Lapsing Schedule - Annual Locker Rentals

Month rental contract made	Deferred beginning of year	Rentals during year (net)	Include in income for month of: January	February	March	April
January 1960	$33.33		$33.33			
February	75.00		50.00	$25.00		
March	83.33		33.33	33.33	$16.67	
April	116.66		33.33	33.33	33.33	$16.67
May	187.51		41.67	41.67	41.67	41.67
June	183.32		33.33	33.33	33.33	33.33
July	162.50		25.00	25.00	25.00	25.00
August	125.02		16.67	16.67	16.67	16.67
September	233.31		33.33	33.33	33.33	33.33
October	395.86		41.67	41.67	41.67	41.67
November	700.03		66.67	66.67	66.67	66.67
December	766.70		66.67	66.67	66.67	66.67
January 1961		$900.00	37.50	75.00	75.00	75.00
February		700.00		29.17	58.33	58.33
March		500.00			20.83	41.67
April		400.00				16.67
May		500.00				
June		400.00				
July		300.00				
August		200.00				
September		500.00				
October		700.00				
November		800.00				
December		900.00				
Totals	3112.57	6800.00	512.50	520.84	529.17	533.35

May	June	July	August	September	October	November	December	Deferred end of year
$20 83								
33 33	$16 67							
25 00	25 00	$12 50						
16 67	16 67	16 67	$8 33					
33 33	33 33	33 33	33 33	$16 67				
41 67	41 67	41 67	41 67	41 67	$20 83			
66 67	66 67	66 67	66 67	66 67	66 67	$33 33		
66 67	66 67	66 67	66 67	66 67	66 67	66 67	$33 33	
75 00	75 00	75 00	75 00	75 00	75 00	75 00	75 00	$37 50
58 33	58 33	58 33	58 33	58 33	58 33	58 33	58 33	87 53
41 67	41 67	41 67	41 67	41 67	41 67	41 67	41 67	104 14
33 33	33 33	33 33	33 33	33 33	33 33	33 33	33 33	116 69
20 83	41 67	41 67	41 67	41 67	41 67	41 67	41 67	187 48
	16 67	33 33	33 33	33 33	33 33	33 33	33 33	183 35
		12 50	25 00	25 00	25 00	25 00	25 00	162 50
			8 33	16 67	16 67	16 67	16 67	124 99
				20 83	41 67	41 67	41 67	354 16
					29 17	58 33	58 33	554 17
						33 33	66 67	700 00
							37 50	862 50
533 33	533 35	533 34	533 33	537 51	550 01	558 33	562 50	3475 01

to the processing function is increased by the charge for the work on plant-owned product.

A number of methods are available for determining the amount of work done on plant-owned product. A method which is acceptable and easy to apply is to enter the regular charge for the services on the work order tickets and determine the total charge for the batch, then add all the batch tickets for the month to determine the total. This amount becomes the basis for the adjusting entry as follows:

Interdepartment transfer - processing charge	xxx	
Processing income		xxx

The Interdepartment Transfer—Processing Charge account is used in computing cost of sales and is discussed on pages 89, 92, and 93.

Curing and Smoking Income.—Income from the curing and smoking function may be recorded as income either at the time the meat is taken in, at the time the customer is notified to pick up the cured meat, or at the time the customer picks up the meat. The time interval involved here is usually substantial, sometimes 3 months or more. The work involved is spread over the entire period although the major portion of the work is completed soon after the meat is taken in.

Ideally, the income should be recorded in proportion to the work done over the period during which the service is rendered. This is usually not practical. The most logical time to record the income—assuming the entire amount is to be recorded at one time—is when the meat is taken in, since this is closest to the time that the major part of the service is rendered. Most plants actually record curing and smoking income at the time the customer is notified, or at the time the cured meat is picked up, because they find it somewhat easier to maintain the records that way. Either of the methods consistently used will produce reasonably accurate statement amounts. Usually, no adjusting entry is needed for curing and smoking income.

Method II - Without Adjustments

Advantages and disadvantages of this method of determining statement amounts are discussed on page 66. Under this method the statement amounts are determined from two possible sources:

1. The ledger accounts. In many cases the day-to-day recording procedures will record income on the books at the time it is earned, and thus the accounts reflect the proper amounts to show in the statements. Any account which does not require an adjustment under Method I will show the proper amount to use for the statements under this method.

2. Independent calculation or accumulation. Whenever the ledger account does not show the proper amount for the statement, it is necessary to compute the amount from sources outside the books. Any account that would need to be adjusted under Method I will not provide the proper statement amount under this method.

The discussion of each major income account under Method I includes a number of ideas that will be helpful in determining the statement amounts. Those ideas are not repeated in this section. That material, except for the presentation of the actual entries, should be read in conjunction with the corresponding sections below.

Sources of Statement Amounts

Following are all the major types of income accounts, along with an indication of the source of the statement amounts.

Sales.—Usually each of the ledger accounts for sales of merchandise will show the proper amount to enter on the statements. If there are credit sales that have not been recorded on the books because the business is recording sales at the time cash is collected, a separate computation is needed for each sales account to determine the statement amount. The computation is:

Cash collected from all sales during the month		xxx
Add:	Amounts due from customers on credit sales - end of month	xxx
		xxx
Deduct:	Amounts due from customers on credit sales - beginning of month	xxx
	Statement amount	xxx

Storage Income.—Usually the ledger account for storage income will not show the proper amount to enter on the statements because the annual locker rentals are not properly reflected therein. The statement amount should include:

Overflow or short-term rents billed during the month	xxx
Bulk storage income for the month	xxx
Proportionate part of annual locker rentals	xxx
Statement amount	xxx

In some cases the records are set up so that the preceding three amounts cannot be separately determined. For example, some businesses will record in the storage income account all the storage items billed during the month whether from bulk storage, short-term rentals, or annual rentals. If this is done, the amount of annual rentals recorded during this month should be determined from an analysis of the billings. The amount of annual rental income earned during the month should be computed by one of the methods described on page 71. Computation of the amount to include on the statement then is:

Amount of storage income recorded this month		xxx
Deduct:	Annual rentals recorded this month	xxx
Balance	(Income from bulk storage and short-term rentals)	xxx
Add:	Annual rental income earned this month	xxx
	Statement amount	xxx

Slaughter Income.—In many situations the Slaughter Income account will show the proper amount of income for statement purposes. If the value of the inventory of hides at the end of the month is substantial and the amount on hand varies from month to month, the statement amount should be computed as follows:

Slaughter income recorded during month		xxx
Add:	Value of inventory of hides - end of month	xxx
		xxx
Deduct:	Value of inventory of hides - beginning of month	xxx
	Statement amount	xxx

Processing Income.—In many situations the Processing Income account will show the proper amount of income for statement purposes. If the value of the inventory of overrun lard at the end of the month is substantial and the amount on hand varies

from month to month, the statement amount should be computed as follows:

Processing income recorded during month		xxx
Add:	Value of inventory of overrun lard - end of month	xxx
		xxx
Deduct:	Value of inventory of overrun lard - beginning of month	xxx
	Statement amount	xxx

If plant-owned products are processed and the billing price method of accounting for such work is selected, the amount of processing charges for plant-owned product should be computed as explained on page 73 and added to the above total.

Curing and Smoking Income.—Usually the amount shown in the ledger account for curing and smoking will be the amount to include on the statement. Thus, no computation is necessary.

Cost of Sales

In many businesses determining cost of sales is the most important of the accounting processes because of the importance of the amount and the fact that determining the proper amount is somewhat difficult and susceptible to many errors.

In most small businesses, perpetual (continuous from day to day) inventory records are not maintained; hence the computation of Cost of Sales is dependent on actual physical count of inventory each month or on a substitute computation. The material presented in this section includes some suggestions for reducing the amount of work involved in taking inventory and suggestions that may be helpful in making sure that the inventory amount is substantially correct.

Inventory Taking

Under most circumstances, the amount of inventory should be determined by actual weight, measure, or count. "Guesstimates" of the amounts of significant inventory items are of little value. In some cases such guesses can provide very misleading information which, if used in making decisions, can do real harm to the business. This, of course, does not preclude the use of predetermined amounts in inventory calculation nor does it preclude the use of an estimate when the situation is such that the estimate can not be substantially in error.

As indicated previously, the major effort in the accounting process should be devoted to those items that can cause a substantial distortion of reported results. The following paragraphs discuss certain ideas that can be useful in taking inventory and assuring that the amounts are substantially correct.

At inventory time, orderliness is a real virtue that pays handsome dividends. Before starting to take an inventory, the material to be counted should be neatly stacked or arranged to make it easy to count and the number of partial cases or broken lot items should be reduced to a minimum. Insofar as possible, the stock should be arranged so that similar items are kept together. The business that has the same type item stored at several different locations within the same plant should determine whether this is really necessary. Careful planning of storage space and orderliness in handling items stored not only help at inventory time but also aid in the handling and control of merchandise during the month.

Mimeographed or preprinted inventory sheets can be a valuable aid in taking inventory, particularly if the stock is arranged so that the same type items are in the same location from month to month. A separate sheet should be prepared for each storage location showing the description and unit of measure for all items normally kept at that location. Space should be provided on the sheets to list new or additional items. The advantages of these sheets are:

1. They save the time needed for the inventory-taker to write in descriptions.

2. They reduce the possibility of error caused by inadequate description or incorrect indication of unit of measure.

3. They reduce the possibility of error caused by omitting items from inventory.

4. They facilitate an item-by-item comparison with the inventory for the preceding month. The sheets can be aligned side by side and the order of items on the sheets will be the same, since this is prearranged.

Whether or not the preprinted inventory sheets are used, the inventory should be reviewed each month by a person who is familiar with the items in stock and the purchasing and selling functions. The purpose of this review is to spot obvious errors in the inventory and correct them before the inventory is recorded. Such errors as using the wrong unit of measure (for example, number of items instead of number of grosses, and similar mistakes), omitting items from inventory, or including obsolete items that have been previously omitted can often be readily detected by the review.

Inventorying items in display cases is often the most time-consuming part of the entire inventory process. At the same time, the total dollar value of such inventory is often relatively small. Several devices are available to reduce the time involved in counting these items.

If the type of item on display remains the same from month to month, the following procedures will eliminate the necessity of a complete count each month:

1. Make a complete count of the items with the case filled at normal capacity and retain the count sheets for future use.

2. In subsequent months, refill the case to normal capacity before the inventory is started. The quantities determined in the previous count can be used instead of a monthly count until a significant change is made in the type of item in the display case.

3. Instead of refilling the case, the subsequent month's count can be determined by counting the "outs" (that is, the number that would be required to refill the case) and modifying the predetermined totals by these amounts.

Even in those situations where the type of item on display does not remain constant, a good estimate of total quantities can be made by a person familiar with the stock by using his knowledge of the normal capacity of the case and of the type of items in stock. It is obvious that an error in count, which can amount to no more than a few low-unit-cost items, will not significantly distort the financial statements.

Certain items, such as hams, are produced in batches or groups and stored for aging or to await sale. If these batches or groups are kept together throughout their production and storage, and sales

are made from one batch at a time, supplementary records will provide an excellent alternative to actual count for inventory purposes. For example, in producing cured hams a batch control ticket can be prepared when the hams are purchased. This should show the number, weight, and cost of the batch. When the hams are cured and moved to storage for aging, the control ticket is marked with their location and the cost is increased by the cost of production.

At the time that the batch is broken for sales, an average cost per ham is computed by dividing the total batch cost by the number in the batch. This average unit cost and a count of the unsold units provide a basis for computing the inventory of the broken batch. The batch control ticket provides the amount of inventory for complete batches. Similar methods can be devised for maintaining inventory records of other manufactured products.

Taking a monthly inventory of all the items in stock can remain a real burden even when the business uses all available devices for reducing the effort involved. If this is the case, a system of rotating inventory-taking can be used.

By this system the products are grouped into several categories and the inventory for one or more categories is taken the first month, for another category the second month, and so on. For those categories not inventoried, the amount of inventory must be computed. The categories used must correspond with the breakdown used for recording sales, purchases, and so on, since the gross profit percentages determined in the monthly statements are used to compute the inventory amount, as illustrated below. Assume the following for the frozen food department for the month of December:

Sales for the month	$2,400
Purchases for the month	1,360
Inventory at December 1	2,940
Average gross profit percentage for past 3 months	22%

The procedure for computing inventory at December 31 follows:

1. Determine the cost of sales percentage and amount for the month.

Cost of sales percentage,
100% - 22% = 78%
Cost of sales amount,
2,400 x 78% = $1,872

2. Compute the inventory as follows:

Inventory, December 1	$2,940
Purchases during month	1,360
Total goods available for sale	4,300
Goods sold at cost price (above)	1,872
Inventory, December 31 (goods not sold)	$2,428

Use of an average gross profit percentage over a period rather than the percentage for 1 month is preferred since the percentage for a single month can be distorted by errors or unusual operating situations.

Inventory Pricing

A number of methods are used in pricing inventory, each with merit under certain circumstances. These methods are discussed in detail in most intermediate accounting texts. The methods mentioned next are acceptable and will provide reasonable amounts for statement purposes.

Purchased Product

For merchandise that is purchased and resold without additional production

cost—such as frozen food and freezer supplies—the method that is likely to be used in the locker and freezer provisioning industry is first-in, first-out (FIFO). By this method, the merchandise on hand at any time is considered to be the last items purchased and is priced according to the invoice cost of the latest purchases.

Manufactured Product

For the plant-owned product that has been processed or manufactured, the invoice cost of raw material is not the proper price for inventory. Rather, the price must include the cost of processing or manufacturing the product as well as the cost of the raw material.

Several methods of computing the unit cost of processing plant-owned product are discussed in chapter IV, pages 72-75. The method selected for use in making the interdepartment transfer should be used in determining the unit cost of processing for inventory pricing purposes.

Cut Meats

Pricing cuts of meat on hand at the end of the month presents a problem. When a whole beef is purchased and processed, what price is used for inventory of hamburger, T-bone steak, and other pieces? Using an average cost price—that is, total price paid divided by total number of pounds—for all parts of the beef is not reasonable, since all parts of the animal did not "cost" the same. This is evidenced by the fact that a front quarter of beef does not cost the same in the market as the hind quarter or loin. Since it is often impossible to determine cost as a basis for pricing inventory, some substitute basis must be used. If various cuts of meat are normally purchased in the market in reasonable quantities, using the invoice price of those cuts as the inventory price for the plant-owned product is an acceptable substitute.

The inability to determine a cost price for cut meats often leads to the use of selling price as the basis for pricing inventory. This basis is often used by the meat-packing industry. If the price selected is the price in the market in which the business normally sells and the quantities on hand can reasonably be expected to sell at that price, the method is acceptable. The effect of the method is to take up the profit on the quantity in inventory before the product is sold.

Computing Cost of Sales

The basic formula for computing cost of sales for merchandise purchased for resale is:

Inventory at beginning of period		xxx
Add:	Net delivered cost of goods purchased during period	xxx
		xxx
Deduct: Inventory at end of period		xxx
Cost of sales		xxx

For goods that are processed or manufactured at the plant before they are ready for sale, this computation must be modified as follows:

Inventory at beginning of period		xxx
Add:	Net delivered cost of raw materials purchased during the period	xxx
	Interdepartment transfer(s) of processing or manufacturing cost during the period	xxx
		xxx
Deduct: Inventory at end of period		xxx
Cost of sales		xxx

The inventory at the beginning and the end of the period should be priced as discussed in the preceding section. The amount of interdepartment transfer of cost should be determined by one of the methods discussed in chapter IV, pages 72-75. For a particular manufactured product there might be two amounts of transferred cost to consider. For example, if a particular item is processed in one department and then transferred to another department for final manufacture and packaging, the computation would include the transferred cost from the processing department, plus part or all (depending on whether more than one product is manufactured) of the cost of the manufacturing department.

Computing cost of sales and checking accuracy of the amounts are facilitated by use of a comparative worksheet. This computation—although not the specific worksheet—is essential if the statements are prepared without recording adjusting entries and is useful in prechecking the amounts if adjustments are to be recorded. The worksheet illustrated in exhibit XXVII should be headed up across the top with a column for each month and on the side with the elements that go to make up cost of sales for each category. If space is provided for including gross profit and percentage of gross profit, the month-to-month comparison is easier.

Checking the Computation

The number of possible errors that can distort the reported gross profit is so great that the computation should be checked before the amounts are recorded. The best method of checking sales, cost of sales, and inventory is to compute the gross profit percentage for the month and compare it with the percentages for previous months. If the percentage has changed significantly, an investigation should be made to determine the cause of the change. Some of the points that should be considered are:

1. Purchase cutoff. The goods that are purchased near the end of the month should be investigated to assure that a proper cutoff has been made. Goods might have been invoiced and recorded as purchases, but not received at inventory time. These should be included in inventory. Goods might have been received at inventory time but the purchase not recorded. These goods should be included in purchases. A practical, but theoretically incorrect, alternative is to omit the amount from inventory.

2. Sales cutoff. Goods might have been sold and recorded as sales, but not delivered, at inventory time. These goods should be omitted from inventory. Goods might have been delivered and, hence, omitted from inventory but the sale not recorded. The sales price of these goods should be included in sales. Errors in both purchase and sales cutoff are quite likely to occur in meats purchased on special order from customers and being processed at inventory time.

3. Purchases or sales recorded in the wrong accounts. The incorrect recording of one large purchase invoice can substantially change the gross profit percentage. This type error can often be spotted by scanning the Purchase Journal, noting the name of the supplier and the account to which the purchase was distributed. In some cases it is necessary to review all of the purchase invoices recorded during the month and determine that they were recorded in the proper account. Errors of recording sales in the wrong account are more difficult to detect because they are more numerous and usually smaller in

Exhibit XXVII

Computation of Cost of Goods Sold

	January	February	March		December
Hams					
Inventory beginning of month	xxx	xxx	xxx		xxx
Add: Hams purchased this month	xxx	xxx	xxx		xxx
Interdepartment transfer of production cost this month	xxx	xxx	xxx		xxx
Total	xxx	xxx	xxx		xxx
Deduct: Inventory - end of month	xxx	xxx	xxx		xxx
Cost of goods sold	xxx	xxx	xxx		xxx
Gross profit - (sales less cost of goods sold)	xxx	xxx	xxx		xxx
Gross profit percentage (gross profit divided by sales)	xx%	xx%	xx%		xx%
Meats					
Inventory beginning of month	xxx	xxx	xxx		xxx
Add: Meats purchased this month	xxx	xxx	xxx		xxx
Interdepartment transfer of production cost this month	xxx	xxx	xxx		xxx
Total	xxx	xxx	xxx		xxx
Deduct: Inventory - end of month	xxx	xxx	xxx		xxx
Cost of goods sold	xxx	xxx	xxx		xxx
Gross profit - (sales less cost of goods sold)	xxx	xxx	xxx		xxx
Gross profit percentage (gross profit divided by sales)	xx%	xx%	xx%		xx%

Note 1. The inclusion of gross profit and gross percentage is not essential. It is very helpful as a pre-check on the computed amounts. If the percentage varies significantly from month to month, the accuracy of the component items should be rechecked. (See Page 90).

amount, but for the same reasons they are less likely to seriously distort gross profit.

4. Incorrect inventory. The points to consider in checking inventory quantities are discussed under "Inventory Taking," page 86. The price used for manufactured product can easily cause a distortion. The methods of pricing are discussed on pages 88-89. Particular care is needed to assure that the inventory price for goods on hand includes the part of the interdepartment transfer applicable to those goods.

Method I - Cost of Sales from the Books

After the amounts of cost of sales are determined for the various types of sales, the method of recording the amounts on the books will be determined by the accounts used for purchases of goods and for transfer of costs between departments. Many accountants prefer to use accounts entitled Purchases for each of the types of goods bought and to make entries in the Inventory accounts only once a year to record the annual inventories. This procedure is not easily adaptable to the preparation of monthly statements directly from the books of account.

Recording monthly adjustments for cost of sales and inventory is facilitated by using the Inventory accounts to accumulate the cost of purchasing and manufacturing goods during the month. At the end of the month the amount representing cost of sales is transferred out to Cost of Sales accounts, leaving in the Inventory accounts the cost of goods carried over to the next month.

The series of entries for the purchase-manufacture-use-inventory cycle is presented to summarize this phase of the recordkeeping process. The entries are presented for plant-owned hams which are purchased, cured, and sold. Similar entries would be needed for other products.

When hams are purchased, the entry for the purchase is recorded in the Cash Disbursements Journal as follows:

Inventory - hams	xxx	
Cash or Accounts payable		xxx

At the end of the month the cost incurred in curing the hams would be determined by one of the methods discussed on pages 72 to 75. The entry for this cost is recorded in the General or Standard Journal as follows:

Inventory - hams	xxx	
Processing costs charged to plant-owned product		xxx

This entry assumes that a cost method is selected for determining the amount to be transferred. The account Processing Cost Charged to Plant-Owned Product is entered on the appropriate functional Expense Report as a deduction before Total Expense is brought forward to the Income and Expense Summary.

If the "selling price" method is used for determining the amount to be transferred between departments for work on plant-owned product, the entry to record the charge for curing the hams would be:

Inventory - hams	xxx	
Interdepartmental transfer - processing charge		xxx

Under this method, the account Interdepartmental Transfer - Processing charge is debited when the charge is added to income (page 84) and credited in the above

entry. Therefore the account will show equal debits and credits and never have a balance after all entries have been made. It is a useful account, nonetheless, since the amount of interdepartmental charge for any period can be determined by adding the debits or credits to the account.

After these entries have been made the Inventory - Hams account will include the cost value of inventory at the beginning of the month, the cost value of purchases of hams during the month, plus the value added by work done on the product during the month. The next step is to determine the amount of cost of sales as explained on pages 89-90. The entry for Cost of Sales is recorded in the General or Standard Journal as follows:

Cost of sales - hams	xxx	
Inventory - hams		xxx

When this entry is posted, the Inventory - Hams account will include the cost value of hams carried over into the next month and the Cost of Sales - Hams account will include the cost value of all hams sold this year. The amount to show on the Income and Expense Summary as the Month's amount is the amount transferred in the preceding entry; the amount to show as Year-to-Date is the total in the Cost of Sales - Hams account.

Method II - Without Adjustments

The computation of amounts to enter as cost of sales on the statements has been previously discussed under Computation of Cost of Sales, pages 89-90. The summary worksheet described under that heading should be prepared and retained. The amounts from the summary worksheet should be entered on the Income and Expense Summary.

Other Income and Outgo

Other Income is the designation assigned to income earned by the business from financial transactions and from other transactions outside the regular income-producing activities. This would include such items as interest income, carrying charges, gains on sale of assets, and cash over and short. Other Expense designates financial expense and various expenses arising from transactions outside the regular operating activities. This includes such items as interest expense, life insurance premiums, donations, and discounts allowed. The amount that should be included on the monthly statement for these items is the amount earned or used up during the month. Therefore, if the amount recorded during any month is substantially different from the amount actually earned, the unadjusted ledger account does not show the proper amount for use on the statement.

For the business using the adjustment method this means that appropriate adjustments will need to be made. The adjusting entries discussed previously will provide a guide to developing these adjustments.

For the business not recording adjustments on the books, this means that the proper statement amount should be computed. The computation methods discussed in connection with the operating accounts will provide a guide to determining the proper statement amounts for these items. The amounts should be entered on the Income and Expense Summary from the ledger accounts or from the computations.

Completing the Income and Expense Summary

If the procedures discussed in chapter IV and in this chapter have been carried out, all the information needed to complete the Income and Expense Summary is now available. All the income accounts have been entered on the Summary or are available from the ledger accounts or independent computation. The cost of sales has been determined for entry on the Summary. The Functional Expense Reports include the operating expenses for the month and for the year to date, and the portion of operating expense that is charged to Cost of Sales has been determined.

The Functional Expense Report amounts should next be brought forward to the Income and Expense Summary as follows:

1. Enter the amount of Expense Charged to Plant-Owned Product on the appropriate Functional Expense Reports and on the Total Expense Report, and compute the net expense balance.

2. Transfer the month and year-to-date amounts from the Functional Expense Reports to the appropriate lines on the Income and Expense Summary. Note that the balance from the Total Expense Report is not entered on the Summary since the departmental breakdown of the expense is used.

The Income and Expense Summary can be completed by the following:

1. Compute the amount of gross profit or contribution to income for each department by subtracting the cost or expense from the income.

2. Add the gross profit and contribution to income amounts for each department to determine Total Contribution to Operating Income.

3. Add Selling Expenses and Administrative Expenses and deduct the total from Total Contributions to Operating Income. The balance is Net Income from Operations.

4. To this amount add Other Income and deduct Other Outgo to determine Net Income before Income Taxes.

5. Compute the gross profit percentage or contribution to income percentage for each department and enter in the space provided. The percentage is computed by dividing the net amount in each department by the Total Income from that department.

Comparison of Current Items

If adjusting entries are recorded on the books, the ledger accounts will provide data for preparing a complete Balance Sheet. The only modification needed is that the Retained Income account (Earned Surplus or partner's or proprietor's capital accounts) must be changed by the amount of the Net Income to date. Even where this information is available, a comparison of certain items on a month-to-month basis will probably be entirely adequate for management purposes.

If adjusting entries have not been recorded, the ledger accounts will not provide the data for preparing a Balance Sheet. Each Balance Sheet amount could be computed in much the same way as the

expense and income items were computed, but the methods of computation are not included in this manual.

The sources of amounts that are most important for month-to-month comparisons are as follows:

1. *Cash on hand and in banks:* The ledger accounts show the actual amount of cash.

2. *Accounts Receivable:* Usually the ledger account will show the proper amount to include for Accounts Receivable. If credit sales are not recorded, the amounts due from customers will be computed as discussed on page 79.

3. *Inventories:* End-of-the-month inventories computed to determine cost of sales should be used here. Significant inventory items, which have essentially different characteristics—for example, items which require a long production period or items which are accumulated over a period to sell during a short rush season—should be shown separately on the comparison.

4. *Accounts Payable:* Recommended procedures include recording all accounts payable at the end of each month. If this is done, the ledger account will show the proper amount of accounts payable to include on the Comparison. If not, the unpaid end-of-the-month bills used in computing expense amounts and purchases should be added to determine the total amount of accounts payable.

5. *Notes Payable:* Routine accounting procedures require that notes payable be recorded when money is borrowed on a note or when equipment or other items are purchased and a note given for part or all of the purchase price. If this has been done, the accounts will show the proper amount to include for comparison. If not, the amount must be determined from other sources.

6. *Other Items:* In some businesses, there will be other current assets or current liability items—for example, temporary investments—that change significantly from month to month. If so, these should be included in the comparison.

Chapter VI
Managerial Use of Available Data

Preparation of the financial statements will probably be assigned to a staff person in the business, but responsibility for using the information provided by the statements rests with management.[7]

[7] As stated in footnote 2, "Management" refers to the group of persons who have decision-making power in the business. For the owner-operated plant this is the owner-manager. In other plants this will be the manager and the board of directors or partners.

The most elaborate statements that can be produced will be of absolutely no value unless they are studied and analyzed to provide a basis for the decisions that should be made in managing the business. Accounting data do not provide all the information needed to make business decisions, but are most often an essential element for an informed decision.

The manager who has been "flying by the seat of his pants," using inadequate

information and vague impressions rather than adequate information in making operating decisions should find a wealth of extremely valuable information in the operating statements proposed in this manual.

The material in this chapter is intended to assist management in discovering and using the information provided. Two basic approaches are used. First, the statements are examined to show the type of information they provide and how it can be used. Next, some of the decisions that management might be required to make are presented along with an indication of the factors to consider in arriving at an answer.

Obviously the material presented here cannot encompass all the many problems associated with proper management of the business. It is intended only to suggest some of the uses for adequate financial data. Through study of these suggestions the manager will undoubtedly find many other uses for the information that is provided by the statements or can be obtained from special studies. Experiences of many companies have shown that an initial study has opened up previously unrecognized possibilities for improvement of their operation. Other sections of this manual also include ideas and suggestions that will be useful in analyzing the operation of the business.

The data provided by the methods recommended in this manual will become more useful as a backlog of similarly prepared data is built up. In a seasonal business it is often valuable to compare the operations for a season to the same season during the preceding year, as well as to make comparisons from month to month within the year. The data over a long period of time can be useful in determining the type and extent of shifts that are occurring in the basic operational situation of the business. Projecting these into the future will provide a basis for anticipating future changes and making appropriate plans.

Income and Expense Summary

The Income and Expense Summary is designed to emphasize the amount of income being produced by the various income-producing activities within the business. The income from each income-producing activity is matched against the costs which can be reasonably assigned to that activity. This matching of "effort" and "accomplishment" directs attention to those activities that produce an adequate return and to those not carrying their weight.

The value of this type of information is apparent. It provides a basis for getting the business into proper perspective. Management's major effort should be devoted to those activities which are producing or can be made to produce a substantial amount of business income.

This is not to say that other activities should be "written off" but rather that management effort devoted to improving the income from, or reducing the cost of, a major activity will usually have more effect on the net income; hence, these should have first attention. Some managers spend a major part of their time on pet projects or activities that looked

good at one time but have proven to be nonproductive. This is a waste of management talent.

This manual does not include methods for allocating selling expenses—except those for which a direct association can be determined—or administrative expenses to the various income-producing activities. When selling and administrative expenses are allocated, the basis usually recommended is gross income for each department. This does not provide a realistic measure of the effort actually devoted to the various activities. A more realistic approach for a small business is for the manager to examine his effort and determine whether emphasis is properly placed.

In some situations activities that are not producing an adequate return can be improved. Those producing a large gross income but an inadequate contribution to profit should be investigated. They can often be improved by means of adequate attention to controlling cost, by changing sales price enough to provide adequate profit, or by using special pricing or other devices to reduce the seasonal fluctuations in volume.

Activities that are producing a high percentage return but a low net because of inadequate volume can sometimes be substantially improved by a concentrated sales effort.

The month-by-month comparison of income and expenses should be very useful. It indicates the relative stability of various types of income and the relationship between income and costs for each activity at different levels of operation.

The comparison will probably show that certain types of income are highly seasonal in nature. This would not create too much of a problem if the expenses were just as seasonal; that is, if the expenses could be reduced proportionately as the income declines. In many cases this is not possible. For activities in which the expense remains relatively constant through a wide range of income levels, emphasis should be on increasing total income. (This is most likely to be true for service income and to some extent manufactured product.)

The ways to increase total revenue will depend on a number of factors. In some cases total revenue can be increased by reducing the unit charge for the service or product. In other cases an increase in the unit charge will increase total revenue. Oftentimes total revenue can be increased by offering special prices during low volume periods, by special promotions, or by accepting special contracts at special rates to utilize the space, equipment, and employee time that is not producing revenue.

For those activities where the costs and expenses vary as income varies, the point of emphasis is shifted. The basic idea is the same; that is, to provide maximum revenue to apply against those costs which remain relatively unchanged. However, for these items the emphasis must be on devising methods to increase the net revenue after variable cost. For example, for merchandise sales the variable cost would include the cost of merchandise and some of the selling expenses.

Another important use of the month-to-month comparison is to point out trouble spots to allow remedial action before they have seriously damaged the business.

For example, if the percentage of profit from the sale of one product begins to drop, an investigation to determine the cause should be made. Such a drop could be caused by unrecorded sales, by excessive cost of merchandise, or by the loss of merchandise through theft and spoilage.

Functional Expense Reports

The functional Expense Reports provide information as to the amount of operating effort being devoted to the various phases of the business operation. If an activity is using half the space in the building, it is charged with half the cost of occupancy of the building; if an activity is requiring half the time of an employee, it is charged with half the cost of maintaining that employee. This information is significant in its own right but takes on much more importance when used in conjunction with information as to the amount of income being produced by this effort.

These reports also provide information about the types of expenses being incurred in the various phases of the business operation. For some parts of that operation the major costs are labor and supplies. For others, the major costs are building occupancy costs and so on. This provides a general guide to the differing nature of various income-producing activities.

If the major costs of an activity are building occupancy and related cost, it would indicate that changes in volume of operations will not change the operating cost significantly until the point of capacity operation is reached.

If the major cost of an activity is labor cost, it would indicate that as soon as the volume of operations is high enough to utilize the efforts of the basic labor force, additional volume will mean additional cost in overtime pay or additional employees.

The most important information provided by the Functional Expense Reports comes from the month-to-month comparisons. These provide information as to the "behavior of costs" as the level of operating activity changes. In technical terms this means determining whether the expenses are variable, semivariable, or fixed. In layman's language it means to determine whether or not a particular expense changes significantly as the volume changes and, further, whether it changes in exact proportion to changes in volume or responds only to substantial changes in volume. Certain expenses, such as refrigeration cost for storage, react more to outside factors (temperature) than to changes in volume of operation. This is also a part of the "behavior of costs."

A knowledge of the "behavior of costs" can be acquired from a study of the comparative Functional Expense Reports. Each expense item should be studied for a complete volume cycle (that is, from highest operating volume to lowest and back to highest again) to determine what changes occur as volume changes.

Some of the expenses, such as depreciation, property taxes, and basic insurance, will remain the same as long as no basic change is made in the operating facilities. Others, such as electricity, building repair, and many of the selling and administrative costs, will change independent of changes in volume of operation. Both of these types would be

considered as fixed (unchanging) in making decisions as to any change in volume within the normal operating capacity of the plant.

As to a particular function or department, however, these costs are not fixed. This is true because the facilities currently used for one function can sometimes be converted to productive use in another function. For example, the net income picture for the processing function can be improved by increasing the income from processing or by using the labor and facilities from processing to produce income for another department.

Some expenses, such as labor, laundry, certain repair costs, and others, will remain constant through a limited range of change in volume and then step up substantially when the volume goes above the capacity of the basic labor force or equipment. For this type of cost the points at which the changes will occur under normal operating conditions should be determined. A study of the expenses and a knowledge of the operating situation should allow the operator to determine these points. This information is very valuable because these costs can be considered fixed unless the volume change contemplated will increase total volume to the point of requiring a step-up in total cost.

Some of the expenses, such as supplies used, cost of merchandise sold and some of the labor cost will change directly in proportion to changes in volume of operation. For these items information as to the amount of cost or expenses per unit of volume should be determined. This is needed in connection with decisions concerning any changes in volume of operation. For some parts of the operation, certain expense items will show a decline in cost per unit of product as volume increases up to a certain level and will then start to show an increase in cost per unit. This will often be true for labor cost because excessive overtime, or bringing in inexperienced help, reduces the overall efficiency of the labor force. This decrease in efficiency can be so significant that the total unit cost of a function will begin to increase when a certain volume is reached. This will be true despite the fact that the unit cost for any fixed (unchanging) expense will necessarily decline as the number of units increases.

A knowledge of this phenomenon of behavior of cost is particularly important when a decision is being made concerning special, below-normal-price contracts for service which must be rendered year round. In considering such contracts, the possible loss caused by the extra additional cost incurred at near-capacity operation must be considered in relation to gains caused by keeping the minimum labor force busy during slack season.

Knowledge of the behavior of costs at various levels of operation is essential to an informed judgment as to what expenses would be in the future for alternative courses of action being considered. The specific uses of this information for this purpose are discussed more fully in the section on answering specific questions, pages 107-117. Knowledge of the behavior of costs is also essential to any attempt to establish a realistic budget for future operations or any informed program of cost control or cost reduction. These uses of the data are discussed more fully in the following section on budgeting and cost control.

Budgeting and Cost Control

Many small business managers protest that budgeting is entirely too complex and too time consuming for their use. This should not be true. Budgeting is essentially planning and control. The business manager can estimate income, cost, and expenses for a reasonable future period on the basis of information available from the comparative statements plus his best judgment of the effect of future plans on income and costs. Then, by comparing the actual results with the estimates, he can see what it will take to improve performance, can identify waste and inefficiencies, and can better plan for the following periods.

The small business manager will often state that his intimate knowledge of the business is such that he can effectively plan and control operations without budgeting. This is most often wishful thinking or rationalization of inertia. Every business, both large and small, needs a formal plan for future action. This provides a framework within which on-the-spot decisions can be made that will be consistent with the overall plan of action.

To illustrate by a simple example: The homeowner, confronted with an offer to paint his house at a very good price, checks his bank balance and finds there are adequate funds to pay for the job. He contracts for the work and then finds that his tax bill and insurance bill are due within the month. The embarrassment thus created could have been avoided by having a simple budget of anticipated income and expenses.

The budget is an invaluable aid in planning working capital requirements and establishing proper relations with the bank or other sources for financing those requirements. By anticipating the planned buildup of inventory and accounts receivable and the expected time of liquidation, the manager can present to the lender a complete picture of needs and repayment plans. This substantially increases the chances of getting adequate capital. Other advantages of budgeting are these: It forces planning of operations, it reduces costs by highlighting areas where economies are possible, and it often provides added incentives for good performance from employees—and the manager.

Planning cash requirements so that funds are available to pay invoices within the discount period can have a significant effect on profit. Many suppliers offer cash discounts for prompt payment of invoices. The business that does not take advantage of these discounts because funds are not available is paying a very high rate of interest.

For example, loss of a discount on 2/10-net/30 credit terms means that 2 percent is being paid to delay payment for 20 days. This is an annual interest rate of approximately 36 percent.

The manager of the plant with an adequate study of the Functional Expense Reports and Income and Expense Summary can prepare a simple budget for his use. It might be necessary to obtain the aid of his accountant to set up a formal budget statement. As indicated before, budgeting is nothing more than forward planning. This requires that the manager take a realistic look at what has happened over the past periods and project this into the future with appropriate modifications for planned or foreseeable unplanned changes.

One further possible misconception about budgeting should be considered. A budget is not a strait jacket, restricting operating flexibility. It is a well-considered plan for future operations that provides guidelines for making on-the-spot decisions. It is based on the best information available at the time it was prepared. If a change in the situation calls for a change in plans, there is nothing inherent in budgeting to prevent such changes.

Furthermore, a budget does not provide a license to spend an amount budgeted without regard to changes in the situation. In fact, the budget must remain flexible to serve its purpose. If adjustments cannot be made to budget allowances for changes in activity, the measurement of actual expenses is distorted through the comparison with a rigid measuring stick.

Income Budget

The basis for all budgeting is the forecast of anticipated income from various sources. To know what expenses will be incurred in processing, for example, it is essential that a reasonable estimate of the volume of operations be made. To know how much of a product to manufacture, it is essential that a reasonable estimate be made of the amount that can be sold. These estimates are probably already being made, at least in part, on an informal basis, so that the idea is not completely new. Thus, to put the estimates on a formal basis for a reasonable period in the future should not be too difficult.

A form which can be used for preparing the budget is shown in exhibit XXVIII Forecasted income should be stated in terms of units and dollars whenever possible. A period of from 3 to 6 months should be used at the start.

Sources of information for determining estimates of income will depend largely on the nature of the income item and of the market. The point of departure in making any estimate of income should be the amounts for previous years. Information on income by source is probably available from the old records maintained. If so, the information can be gathered for 2 or 3 previous years. Trends indicated in this information—plus a knowledge of current conditions in the community being served and any proposed changes in advertising, promotion, or other operating conditions in the business—will provide a reasonable basis for estimating income.

Insofar as possible, sales estimates should be broken down by type of product, type of sale (wholesale, retail, quarters, cut meat, and so on), and method of sale (over-the-counter, truck route, and mail order). This breakdown will probably not be possible until a backlog of information has been built up through maintaining records with similar breakdown. The service income estimates should be broken down by types of service, type of product and, possibly, type of clientele (farm business, suburban, and so on).

These detailed breakdowns will make the estimation of income easier and more reliable since it is easier to forecast the effect of changes in operating methods and outside conditions on a particular item than on the overall total. For example, for processing and curing and smoking income from hogs, the manager will know reasonably well the number of hogs in the community and should be able to predict to what extent the market price will be high enough to cause sales rather than use. If, however, he does not know the amount of past income received from this source, knowledge of changing conditions will be of little value.

Exhibit XXVIII

Income Budget

Item		January	February	March	April	May	June
Sales - hams	Number						
	Amount						
Sales - meat	Pounds						
	Amount						
Storage income - lockers -	Number						
	Amount						
Bulk storage							
Slaughter income - Number of heads							
	Amount						
Total anticipated income							

Production Budget

For manufactured products, such as hams and sausages, a production budget is necessary. Enough units must be produced to supply the estimated sales volume and maintain the desired level of stock on hand. For products that require a long production period, this preplanning is especially important. A form that can be used for determining the quantity to be produced is shown in exhibit XXIX.

For items which require a particularly long production period (for example, country cured hams), the current month's forecast of sales will have only a limited effect on the amount to be put into production. The important forecast is for sales for the month that the product will be ready for sale. For example, forecasted December sales might control the number of units started in production during June.

Purchases Budget

Knowing the number of units to be purchased for manufactured product,

management can determine the amount of raw materials needed. A schedule similar to exhibit XXIX should be prepared for each type of item purchased for resale, using the sales forecast for the item as a basis. The results of these computations can then be accumulated on a purchasing budget.

Production Expense Budget

The first budgeting done by a plant manager will probably, of necessity, be done on the basis of overall expenses. The individual requirements of the various functions will not be known. An overall budget of expenses is far better than no budget at all and, in many cases, will be entirely adequate for management purposes.

Items in such a budget must be computed individually. Labor cost will be determined from a knowledge of the basic labor force, their normal volume capacity, and payrates, with additions for extra help or overtime work. Supplies cost will be determined from a knowledge of the expected volume of production supplies used for each type of production. Plant cost will be determined from a knowledge of volume and operating conditions.

The starting point for determining expected cost is a detailed knowledge of past costs. Past costs should be modified by anticipated changes in the cost per unit (pay rate, supplies, insurance premiums, and so on) and expected changes in the amount required. These changes can be estimated from expected changes in volume of operation and a knowledge of planned changes in method of operation.

After a backlog of functionally classified information is built up, the expense budget can be refined to show estimated expenses by function. This means that the planning reflected in the budget would include not only the total amount of planned expenses, but also the purpose to be served by the expenditure. For example, the plan would include both the amount to be paid an employee and the function on which the employee is to spend his time. The planned use for the building space would be included as well as the planned cost of operating the building and so on.

This type of planning (budgeting) can be particularly useful where realistic alternative uses are actually available. A comparison of achieved results with anticipated results is particularly important under these conditions.

Exhibit XXIX

Production Requirements _____ Product

	January	February	March	April	May	June
Sales forecasted						
Desired inventory-end of month						
Total						
Less inventory-beginning of month						
Total units to be produced						

Forms used for preparing the Functional Expense Reports can be used to accumulate this budget information, as well as the selling and administrative budget.

Selling and Administrative Budget

Income of most small plants is not high enough to cover a lavish selling and administrative structure. The costs associated with these functions must be kept under constant observation to see that commitments for fixed salaries and other fixed costs are kept at a minimum. This can be done by using a selling and administrative budget.

The planned expenditure for such items as advertising and promotion, sales salaries, and truck route expenses will affect estimates of sales and service income and, hence, will need to be determined before the income estimates are made. For these expenses, it is particularly important to set up a formal plan and then compare the attained results with those anticipated. Some of the other expenses, such as supplies, will be estimated on the basis of the estimate of sales and a knowledge of the effect of changes in volume.

Many of the expenditures for selling and administrative expenses will not be affected materially by even substantial changes in the volume of the business. These expenditures should be examined carefully to assure that they are necessary to efficient operation of the business. Certain of these expenses cannot be changed immediately because of prior commitments such as employment contracts and investments in facilities; nonetheless, long-range plans that are capable of attainment can be made.

Cash Budget

Small businesses must be certain that funds are available when needed to finance additions, replacements, or improvements of facilities and that working capital requirements are met. This requires financial planning. A form that can be used to prepare a detailed cash budget for a 6-month period is presented in exhibit XXX.

For some of the items in exhibit XXX, a separate calculation or accumulation will be needed to determine the amount. The detailed cash receipts record for the previous years will be quite useful in determining the expected collections of cash. The amounts will need to be modified by expected changes in collection policy.

To use the income forecast discussed under Income Budget, page 101, it will be necessary to convert the sales figures from sales made to cash collected from sales. This requires a separation of cash sales from credit sales so that the amount to be collected each month can be estimated. The same is true of service income.

Cost and expenses must also be modified to determine the amount of cash outflow. The amounts set up in the forecasts of production and expenses represent an estimate of the amounts to be used up during the accounting period, whereas a cash budget must show the amounts to be paid for during the period. The material, supplies, and goods used in production and sales must be converted to cash used in paying for them. Thus if payment is made 30 days after the goods are purchased, this must be taken into account in determining the cash requirements.

For many operating expenses, the cash outlay is made during the month that the services are used up. If this is the case,

the operating expense budget amount can be used as the cash outflow amount. As pointed out in the discussion of adjustments in chapter IV, the cash outflow does not correspond to expense amount for many items.

Exhibit XXX

Cash Budget

	January	February	March	April	May	June
Expected cash receipts from:						
Cash sales						
Cash collected from services						
Collections of receivables						
Other cash inflow						
Total						
Planned expenditures for:						
Replacements of equipment, etc.						
Materiel purchases						
Supply purchases						
Payroll						
Other plant expenses						
Other selling and administrative expenses						
Income taxes						
Other						
Total planned expenditures						
Receipts over (under) expenditures						
Cash brought forward from preceding month						
Cash balance (deficit)-end of month						

Depreciation is the most striking example of this. The cash outflow for machinery usually has little relationship to the time it is used. Good accounting requires that depreciation be charged to expenses as the machinery is used up. Budgeting requires that the cash outflow be considered as cost of the machinery is paid.

Certain other expense items are not paid for at the time they are used up. In any case where the cash outflow does not correspond with expense, the expense budget will need to be modified in preparing the cash budget. Except for materials and supplies, insurance, taxes, and depreciation, this difference in timing can usually be ignored without seriously distorting the cash budget.

Cost Control Through Budgeting

"Cost consciousness is cost saving." The manager who studies the costs and expenses of the business to set up plans for the future will find many areas where costs can be reduced without lowering operating efficiency. Even in a well-managed business, practices develop that are desirable for that time but are often continued long after the reason for them has passed. Elimination of these in the budget-building process will have a favorable effect on profits.

Planning itself can reduce cost by avoiding duplication of effort and unnecessary crash programs to complete jobs. Planning reduces cost by aiding in the orderly, complete utilization of available labor and facilities.

Without question the most productive management time will be that spent in analyzing operating results and planning future operations while away from the pressure of day-to-day operating decisions.

Budgeting is the most valuable cost control tool available to any business. While comparison of past activities from period to period is very valuable, control is attained only by setting up an appropriate plan and measuring the attained results against the plan. If the plan is made to include all significant parts of the entire operation and is set up on a formal basis to allow for measuring attainment, it becomes an effective control tool.

Break-Even Concept

The complex operations of the typical freezer locker and freezer provisioning plant make it impractical to attempt to set up a formal break-even chart. This is true because an unlimited number of combinations of sales and service income will produce a break-even situation—that is, a situation where the total income is exactly enough to cover total expenses, producing neither a net profit nor a net loss. Nevertheless, many of the fundamental ideas associated with the break-even concept can be effectively used.

For the overall business, a study of all expenses for past periods will provide data on minimum costs which must be incurred if the business is to operate at all. This total can be broken down to a weekly or daily amount to provide a yardstick that will indicate the income that must be produced to cover those costs. A determination of gross profit percentage on sales and percentage of service income over variable cost will indicate the amount that each of these will contribute toward the basic cost. This provides

a daily or weekly "goal." The manager should strive to attain some combination of sales and services which provide at least that amount even in slow periods.

This basic concept is particularly valuable when alternative courses of action are available. For example, if the situation is such that the manager has the option of remaining open or closing on Saturdays, the difference in cost between remaining open and closing should be determined. This difference becomes the base cost for that day's operation and can be measured against the income produced that day. The same analysis can be used for parts of the business such as the slaughter facility, which can often be scheduled for part-time operations.

A study of the functional expense reports provides a basis for determining the basic operating cost for each function under the currently used assignment of space, personnel, and facilities. This provides a means of determining the volume of operation needed to cover that amount of cost. A decision as to how much each function should contribute to selling and administrative costs, based on the effort devoted to each, will provide a means for determining the volume of each needed to break even. Knowing whether such a volume is reasonably attainable will provide a guide as to whether the basic emphasis should be shifted to other more productive activities.

When the operating cost can be broken down to smaller units, the break-even type concept can be more useful. For example, when deciding whether to add a new truck to an existing fleet, a knowledge of the total operating cost of the existing trucks will provide a basis for determining how much the added cost for the new truck on a similar route will be. This can then be converted into the volume of sales that must be attained for the truck to pay off.

This same type analysis can be used for adding new building facilities, new equipment or new permanent employees. Whenever the decision concerns an investment of a long-term nature, or a commitment to a long-term expense, the additional volume must be reasonably attainable for a similar period of time if the investment is to be attractive.

Specific Decisions

Using the information available from accounting records in making specific management decisions is illustrated in this section. No attempt is made to cover all decisions or even all types of decisions with which management is confronted. Rather, a few questions are presented along with an indication of the factors that should be considered in arriving at an answer. The main purpose is to suggest means for finding answers and criteria for determining what information is pertinent to different decisions, rather than arriving at specific answers.

A few general points about decision-making should be considered before discussing specific decisions. The first point is that the refinement of information needed for a decision will depend on the decision being made. Information prepared on an overall basis is completely adequate to make overall decisions. Thus, if the decision to be made is whether to

accept an offer for the purchase or lease of the entire plant, information on the income and expenses from specific activities is not needed—unless it can be used to determine whether the overall profit picture can be changed in the future. On the other hand, if the decision concerns a particular income-producing activity, the information must be broken down so that that activity can be segregated from the others.

Another point, and in some cases the most difficult to accept, is that the starting point for making a decision is "where you now are." The only really important information for a particular decision is information as to the changes that will result. A change can be only "from something to something else," whether you are speaking of income, expenses, customer relations, employee relations, or anything else.

Factors to be considered in deciding whether to accept an offer or start a promotion to increase the volume of processing are quite different for the plant operating at capacity as compared to the plant operating at half capacity. The factors to consider in deciding whether to buy a piece of equipment are very different from those concerning the equipment after it is purchased.

Accounting data is necessarily historical in nature. It provides information on results accomplished by all the decisions made in the past. This information provides a basis for determining the probable effect of future action and quite often is the only basis for a realistic determination.

Care must be taken, however, to assure that the information used does not confuse the effect of past decisions with the probable effect on future action. For example, take the problem of purchase of a piece of equipment such as a truck for a truck-sales route. In deciding whether to buy the truck, all the cost of its operation, including depreciation, property taxes, insurance, and license as well as gas and oil, repairs, and driver cost must be considered. The accounting records on other trucks will provide a basis for estimating the operating cost of this truck.

After the truck is purchased, however, depreciation, insurance, property tax, and license will not change whether it is used much or little. Therefore, decisions as to how the truck will be used and how much should be made without any consideration of these unchanging costs. Depreciation would be considered again as a cost only for a decision on whether to keep the truck or dispose of it. At that time, the amount of depreciation included as a cost would not be the amount used for accounting statement (or tax) purposes but would be a substitute amount. The substitute amount would be based on the new alternatives available. To keep the truck will cost the amount that it could be sold for; therefore, the sales price divided by the estimated future life would be the new depreciation cost. The original cost is no longer pertinent—except for the possible income tax effect—since the decision to buy has already been made and cannot be reversed. This concept is illustrated in discussing whether to sell the plant.

In discussing the decision on whether or not to sell the plant, certain rather restrictive assumptions will be made so that the illustration can be carried through to an answer. In the other presentations, the factors to be considered and their effect on the decision will be discussed,

rather than attempting to draw specific limits and arrive at a final answer.

To Sell the Plant

This question is discussed, not because it is a decision facing management often, but because it does plague the owner-manager—very few haven't wondered whether they should sell out. Furthermore, it illustrates the difference between the type of information needed to make this very broad decision and that needed for more specific decisions. In this presentation assumptions are outlined to set the framework for determining an answer. These assumptions might not be true for other plants; hence, the actual situation must be examined to determine what assumptions can be reasonably made.

Facts Ascertained

1. Plant was built in 1946. Total cost of plant and equipment was $160,000. Equipment has been replaced as necessary and is in good condition now.

2. Average annual gross profit on sales plus service income over the past 5 years has been $70,000.

3. Average annual operating expenses have been $69,000, including depreciation of $7,000 and compensation to the owner-manager of $4,000.

4. Average annual net income before taxes has been $1,000. This is not considered an adequate return on invested capital. The owner-manager also questions whether $4,000 is an adequate salary for the work he is doing.

5. An offer of $60,000 is received for the entire property, including building and all equipment. This represents the fair market value of the property.

Assumptions

1. The income and expense picture will not change significantly in the foreseeable future.

2. If the plant is retained, the value at the end of 10 years will probably be $50,000 with the same level of expenditures for repairs and replacement that is now in force.

3. Inventory and accounts receivable could be liquidated without any significant losses.

The Decision

Assuming that income and expenses cannot be substantially improved, the decision must rest on the other factors involved. The depreciation charged in computing the $1,000 of net income is $7,000 based on the original cost and the original estimate of the life of the assets. This amount is not significant to the decision on whether to sell the plant. The decision to purchase the plant was made several years ago and cannot be reversed. Any loss, or gains, that result from a sale will result from the original decision to buy the plant and should not enter into a current decision—with the exception that the tax effect must be considered as a modification of the net amount received. The assumed reduction in value of $10,000 over the next 10 years should be used instead in deciding whether to sell now.

Substituting $1,000 of "depreciation" for the $7,000 in the current statements will increase profits to $8,000 a year.

The next factor to consider is the amount received by the owner-manager as compensation. The $4,000 a year does

not represent the fair value of such a job. This amount, and any hidden compensation such as use of equipment for personal use, should be pulled out and replaced by an estimate of the fair value of the job. Note that if the plant is owned by someone other than the manager, this correction is not needed since the cost to the business is the amount actually paid. Assume that the value of the owner-manager's service is $7,500 and that $4,000 is the only compensation received. Substituting this for the compensation received will change the profit to $4,500.

The decision as to whether to sell will then rest on the answers to the following questions:

1. Can the net proceeds, after tax, be invested to produce a better return (better than $4,500 per year) at a comparable risk?

2. Can the owner-manager obtain another position that would pay a comparable salary ($7,500) with comparable job satisfaction?

3. Are there other factors, such as special employee situations or unpaid services from members of the family, that should be considered?

Note that the projection of income into the future was based on the assumption that no significant changes in income or expenses could be reasonably anticipated. If this is not true, the average past profits must be modified by the prospective changes. Also note that the same line of reasoning would be followed if the plant could be sold for, let us say, $200,000 except that the income tax on the gain would have a greater effect.

To Eliminate a Function

The Income and Expense Summary broken down by function might show that a particular function is showing a net loss. The immediate reaction will probably be, "Let's eliminate that service!"

Before such action is taken, a number of factors need to be considered. The final decision must rest on the net effect that this action will have on the total profit for the business. Thus, the change in income caused by the action must be measured against the change in expenses resulting from the action. Discussion of this question is divided to clarify the points involved.

First Assumption

Assume that the space, equipment, employee time, and so on could not be used productively in another function. Under this assumption, changes in total expenses that could be expected would be as follows:

1. Supplies used for the function could be eliminated.

2. Payroll cost could be reduced but probably not by the amount that is currently charged to the function. A study of the actual situation would disclose whether an employee could be dismissed and how much extra help and overtime pay could be eliminated.

3. Repairs and maintenance cost on equipment used solely for this function could be eliminated.

4. If new equipment or facilities will be needed to continue the function, elimination of the function would eliminate the depreciation and interest cost caused by the purchase of that equipment.

5. If old equipment could be sold, total expenses would be reduced by a prorata

part of the possible sales price. (To compute this amount, divide the expected sales price by the estimated future life of the equipment.)

6. Some part of insurance, taxes, power, and similar items might be eliminated.

7. Many of the expenses now charged to the function would not change. Eliminating the function would mean that these costs would be shifted to other functions. The unchanging expenses would include most of the building occupancy cost, equipment depreciation, most of the insurance, taxes, and power.

The costs that could be eliminated should be computed and matched against the income produced by the function. If the expenses eliminated exceed the income produced by the function, elimination should be considered. Other factors to take into account include the following items:

1. What effect will this have on other functions? If this function is needed to attract other business, the probable effect on the other business must be considered. This could require that the function be retained even if it is operated at a direct loss.

2. Could changes be made to make the function more productive? Some times operating economies or price changes can be put into effect to make a function productive.

Any major function currently operating at a loss, based on a reasonable apportionment of all operating cost, will eventually require elimination unless it can be made to produce an adequate return. A short-run decision is based on the factors just discussed, but long-range plans must be made to take some corrective action by price changes, operating economies, or other means.

This is true because the elements of repairs and maintenance and purchase of new equipment to continue the function become increasingly important as the equipment and facilities in use grow older. Furthermore, the labor cost per hour can be expected to increase. New equipment cannot be purchased unless it will pay its way. New labor cannot be hired unless it will produce revenue adequate to cover the cost.

Second Assumption

Under different circumstances, assume that the space, equipment, and employee time could be used for another income-producing activity.

Under this assumption, the decision rests on the same factors (that is, the change in income compared to the change in expenses), but the changes that will occur are different. The changes in expenses that would need to be considered include:

1. Supplies used for the old function would be compared to those needed for the new.

2. Labor cost must be considered. Can the new function be performed by the same personnel? Would more or less part-time help or overtime be needed for the anticipated volume? Would greater skill be needed so that costs are higher and replacements more difficult to find?

3. Changes or renovation of facilities and equipment needed for the new

function must be considered. The cost of renovation and equipment purchased should be reduced by the sales value of old equipment and the net amount divided by estimated useful life of the new equipment—or the time that the new function can be expected to produce the anticipated revenue, if this is shorter. This is an added cost of the new function.

4. Other cost changes should be determined. If the "new" function is one in which the business is now engaged, the effect on cost will be easier to estimate than if it is completely new because of the records available on the activity.

The changes in income should next be determined. When the old function was not to be replaced, all its income was considered to be eliminated and the only question remaining was the expected effect on other operating functions. With a change to a new function, the income from the new function must be estimated.

This requires an answer to the following questions:

1. What volume can be handled with the facilities and labor force available?

2. What portion of this maximum volume can be reasonably anticipated on a sustained basis?

3. What price can be expected?

These factors will indicate the anticipated new revenue. The difference between this and the old revenue should be compared with the change in expenses anticipated. The effect on the other income-producing activities should be determined insofar as possible.

Another factor that must be considered is the relative stability of the new income as compared to the old. Could a broad base of relatively stable customers be built up or would the income depend on the whims of one or a few businesses?

To Add a Function

When a business contemplates adding a completely new income-producing activity, answers to the questions that arise are not as easy to find as when the decision concerns changes in existing activities. Adequate records on the experience of the firm in existing activities provide a basis for determining the effect of changes in those activities, but if the business has had no such experience, other sources of information must be tapped.

Often this information can be obtained from other plants which have the activity, if there is no direct competition involved. This will probably be the most reliable source of information, if the data is obtained and analyzed adequately, since there is no substitute for actual experience to indicate normally unforeseeable difficulties.

New activities that are substantially different from those now engaged in should be studied carefully to anticipate accurately the income and expense that can be reasonably expected. The greater the initial investment required, the greater the assurance should be that the estimates are reliable.

No Added Investment

Activities which can be tacked on to current activities can often be tried without serious interruption of current activities or commitment to any substantial expenditures. The experience so gained will be valuable in determining whether to expand or discontinue the service.

One point of caution about these tacked-on activities should be noted. When they are assumed during a slack season, the changes in expenses will often be quite small because existing facilities and labor can be used. If they must be continued through the busy season, the overall effect must be measured against anticipated income. This means that the amount of machine time, labor time, and space required to perform the service must be measured. Then the added cost of extra overtime operation and extra help hired during the busy season must be included as the cost of the performance of this service for measure against anticipated income. The possible loss of revenue from regular activities because of lack of facilities during capacity operations must also be considered.

Requiring Investment

If a new function requires a substantial investment in new facilities or a commitment to hire new employees, or if current activities warrant possible expansion of facilities, new factors must be considered. The changes in costs that occur when new activities are assumed or old activities expanded are often quite different from the changes that occur when a current activity is dropped. Here again, the anticipated change in income must be measured against the anticipated change in expenses.

As a specific example, consider the factors involved in a decision to add a wholesale truck route to a business that is now primarily providing processing services. The questions about income, to which an answer must be obtained, include the following:

1. What volume of sales can be reasonably expected?

2. Will these sales be such that the meat purchased can be fully utilized? Or will special sales or reduced prices be needed to dispose of part of the animals?

3. Will the volume be reasonably stable throughout the year or will peak periods be the pattern? If peak periods are expected, will they be at the peak of current operations, or will they be at the slow period?

4. What type customers will buy these products? Will they be loyal to good-quality product and good service or will they look for price only? Will there be a large number of customers or will two or three account for most of the volume?

This information will provide a basis for determining the total sales value of the anticipated sales and some indication of the seasonal and long-range stability of the income. It could be obtained from a number of sources—such as market surveys, discussions with prospective customers, discussions with operators furnishing similar services in other localities, and a knowledge of the current source of meat for prospective customers.

The costs associated with such a proposed venture can be divided into three areas; namely, raw materials cost, sales and delivery cost, and processing cost to prepare the product for sale.

Raw materials cost can be determined from an estimate of the volume of sales anticipated and a knowledge of the source of supply which must be used. If the sales will be such that pieces rather than whole animals must be purchased, a source of supply to meet the anticipated volume must be found and a knowledge of prospective cost obtained. Raw-materials

cost will usually vary directly as the volume of sales varies so that the major concern is a source of supply that will provide the amount actually needed at a price sufficiently low to provide an adequate gross profit margin.

Sales and delivery cost will include:

1. Payroll cost for a truck salesman. If the current labor force can be used for part or all the work without seriously affecting other operation, this should be taken into account. This might be possible for the slack season or until a good volume is built up. If this is done, the cautions regarding "tacked-on" activities discussed above must be considered.

2. Truck cost for delivery. This will include depreciation, insurance, taxes, license, repairs and maintenance, and gas and oil. The record on current trucks used for other activities will aid in making this estimate.

3. Advertising and promotion costs. The type and extent of these activities must be determined along with an estimate of the net addition to current costs.

Many of these costs will not vary significantly as the volume of sales changes. After a person is hired on a straight salary, the only way to reduce the total expense is to fire him; after a truck is purchased, depreciation, insurance, taxes, and license do not vary significantly within a wide range of operating activity.

Because of these factors, the wise manager will compute anticipated profit at the expected volume, and then at several levels below that volume, to determine the effect on profits if the expected volume is not realized.

The additional processing cost that will be incurred to prepare the product for sale can be reasonably estimated from a study of the behavior of various processing costs at different levels of production. One of the major advantages of this type of activity is that it utilizes the labor force and plant facilities more efficiently. Thus, the activity would be much more attractive if the major volume could be attained during the slack season for regular operations. Conversely, it would be much less attractive if its peaks and slack periods would correspond to those already experienced.

To Accept Special Contracts at Lower Rates

The factors to consider here would include:

1. Would this affect regular rates? That is, if a regular customer hears about it, is he going to expect the same rate?

2. Can this be dropped when the regular rate customers come in? Or better stated, can this special work be handled without interfering with regular rate customers either because season is different or because of special circumstances?

3. What additional expenses would be incurred in handling the special customer?

If the plant is not operating at capacity, any contract that will produce more than the additional cost of providing the service without interfering with the regular operations will increase total profit.

Example 1. Assume that an offer is received to guarantee 5,000 pounds of zero storage continuous for at least the next year on condition that a price of 1 cent

a pound each month is charged. This is below regular rates. The user will furnish all labor needed to pack the material in and take it out, but the business must keep records of the quantity in and out and assume responsibility for any losses. The following facts are learned:

1. The material will be hard frozen when received.

2. The packaging is such that, with care in stacking, this volume can be handled without interfering with any regular storage that can be reasonably anticipated.

3. Checking the material in and out will take about 2 hours a week. This can be handled by the regular labor force without interfering with other work except from November to March. During that time, the extra cost is estimated at $4 a week.

Under these conditions the addition to income would be $50 a month for 12 months or $600 a year. The added cost that can be anticipated is $4 a week labor cost for 26 weeks or $104. The net addition to income of $496 should be compared to the cost of recordkeeping and the possibility of any loss payout.

Example 2. Assume that a company offers to contract for 2,000 pounds of curing each week during the year at a 4-cent rate but only if the service can be provided year-round. Assume further that an analysis of current operations provides the following information:

1. The plant is operating at capacity; that is, with bins full during November, December, and January, but for the other 9 months there is ample space to take care of this extra volume. During this 3-month period curing at a rate of 6 cents a pound will be lost.

2. The regularly employed work force can handle this added volume without overtime from April 1 to October 1. During the other months it will require 10 hours overtime a week at a rate of $2 an hour.

3. Direct supplies used will cost 1 cent a pound of product.

The changes that would occur in income due to acceptance of this offer would be:

Additional income provided	
2,000 lbs. x 52 weeks - 104,000 lbs. @ 4¢ -	$4,160
Income lost	
2,000 lbs. x 13 weeks - 26,000 lbs. @ 6¢ -	1,560
Net addition to income	$2,600

The changes that would occur in expenses would include:

Supplies for 104,000 lbs @ 1¢ -	$1,040
Extra labor - 26 weeks @ $20.00 -	520
Total added expense	$1,560

Accepting the contract would provide an additional $1,040 of income to contribute toward profit.

To Change Price Structure

Changing the total price structure for services rendered presents somewhat different problems from accepting individual contracts at a price below regular prices. The effect of a specific contract can be reasonably measured in advance. The effect of a general price change is somewhat more difficult to measure. Nonetheless, general or selective price changes should be considered for any service that is not providing an adequate return over its share of total operating cost.

The effect that a price change will have can be determined after the fact; that is, make the change and see what happens. Yet mistakes made by using this method can be rather expensive in terms of effect on profit. A much safer method is to make an adequate study of the customers and potential customers and the competition in the area to provide a basis for predicting the effect of the change. This can often be supplemented by discussion with other operators who charge different rates or who have actually changed their rate structure.

The basic question that must be answered regarding a price change is: "What change in total volume will it cause?" If this can be determined, the effect on profit can be predicted.

The effect on net profit will be the combination of the effect on income and the effect on expenses. For example, assume that current price for basic processing is 6 cents, current volume is 300,000 pounds, and it is determined that an increase in price to 7 cents will reduce volume by 15 percent. The effect on income can be determined directly from these facts.

Current income is 300,000 lbs. at 6¢ -	$18,000
Volume at the new price would be old volume less 15 percent - 300,000 - 45,000 = 255,000 lbs.	
Income at new volume would be:	
255,000 lbs. @ 7¢ -	$17,850
Net reduction in income	$ 150

The effect on expenses can be determined from a study of the expenses at varying levels of production and a determination as to the timing of the loss in volume. If the entire volume loss occurs during the summer months, the reduction in expenses would be much less than if the volume loss occurred during the busy season.

If supplies used cost an average of one-half cent a pound of processing, the saving in supplies for the 45,000 pounds not processed would be $225. If one part-time helper could be eliminated for the busy season at a total saving of perhaps $900, the net direct reduction in expenses would be $1,125. This would provide an addition to profit of $975—and possibly more—because of less wear on machinery, less power cost for freezing, and other reductions in cost.

For some services, it will be found that total expenses are not significantly affected by changes in volume. This will probably be true for zero storage and for processing and other services, up to a certain volume level, during the slack season. For these, any change in price which produces a greater total income will usually increase net profit. If reducing prices will increase volume enough to provide a greater total income without significantly changing expenses, this will increase net profit. If increasing prices will not reduce volume sufficiently to

reduce total income, net profit will at least remain the same and the strain on employees and facilities will be reduced.

For other services, it will be found that total expenses are substantially affected by changes in volume. This will likely be true for any service involving substantial labor as soon as the point is reached where the normal work force is fully utilized. It will also be true for any service involving a substantial amount of supplies and for any service where the normal capacity for facilities has been reached. For these, any change that increases volume must create enough added income to pay at least the added cost. Any change decreasing volume can cause a reduction in total income unless the reduction in cost is greater.

To Use a Variable Price Structure

For services that are highly seasonal in nature, the possibility of a variable price structure should be considered. The idea is to set prices so that the peak period is spread over a longer period, thereby smoothing out the fluctuations in volume. This will require that the price charged during the busy season is higher than the price charged during slack periods and that this is sufficiently advertised to accomplish spreading.

At first glance, this appears to be completely illogical because the Functional Expense Reports will undoubtedly show a higher unit cost of operation during periods of low volume. Actually it is completely logical. If the spreading effect can be accomplished, the total cost of operation can be reduced. There is little question that a large volume of processing can be done more cheaply if it is spread evenly over a period of 6 months than if 80 percent of it is concentrated in 3 months. How much cheaper can be estimated from a careful analysis of expenses through a complete year.

The effect on total income will be determined by an estimate of the volume that will be obtained at each price. If the pricing does not produce the spreading effect desired, it will reduce total income without a corresponding effect on expenses unless there is an increase in price during the busy season to offset losses due to the low price during other seasons. If it is concluded that the changes in price will not significantly affect the volume at the different periods, it logically follows that an increase in price will not substantially reduce volume. If this is true, an increase in price will be the logical approach to making the activity produce a greater net income.

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